```
=> fil reg
FILE 'REGISTRY' ENTERED AT 09:15:03 ON 07 MAY 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    6 MAY 2003  HIGHEST RN 511508-58-0
DICTIONARY FILE UPDATES:   6 MAY 2003  HIGHEST RN 511508-58-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can l1

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   9005-25-8  REGISTRY
CN   Starch (8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   .alpha.-Starch
CN   Absorbo HP
CN   Ace P 320
CN   Actobody TP 2
CN   Aeromyl 115
CN   Agglofroid 009
CN   Agglofroid 313E
CN   Allbond 200
CN   Alphajel KS 37
CN   Alstar B
CN   Amaizo 100
CN   Amaizo 213
CN   Amaizo 310
CN   Amaizo 5
CN   Amaizo 71
CN   Amaizo 710
CN   Amaizo W 13
CN   Amalean I-A 2131
CN   Amalean I-A 7081
CN   Amicoa
CN   Amidex 3005
CN   Amidex 4001
CN   Amido-STA 1500
CN   Amigel
CN   Amigel 12014
CN   Amigel 30076
CN   Amijel VA 160
CN   Amilys 100
CN   Amycol HF
CN   Amycol W
CN   Amylogum
CN   Amylomaize starch
CN   Amylomaize VII
```

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

CN Amylon 70
CN Amylose, mixt. with amylopectin
CN Amylox 1
CN Amylum
CN Amyren 14
CN Amyren 71
CN Amysil K
CN Amyzet TK
CN Argo Corn Starch
CN Arrowroot starch
CN AS 225
CN AS 225 (starch)
CN Atomyl
CN Aytex P
CN B 200
CN B 200 (polysaccharide)
CN Bakeup YT 10
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
DEF A high-polymeric carbohydrate material primarily composed of amylopectin and amylose. It is usually derived from cereal grains such as corn, wheat and sorghum, and from roots and tubers such as potatoes and tapioca. It includes starch which has been pregelatinized by heating in the presence of water.
DR 9057-05-0, 53262-79-6, 131800-97-0, 60496-95-9, 67674-80-0, 75138-75-9, 75398-82-2, 154636-77-8, 152987-55-8, 85746-25-4, 42616-76-2, 53112-52-0
MF Unspecified
CI COM, MAN
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
56963 REFERENCES IN FILE CA (1957 TO DATE)
6151 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
57068 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:293419

REFERENCE 2: 138:292805

REFERENCE 3: 138:292793

REFERENCE 4: 138:292775

REFERENCE 5: 138:292771

REFERENCE 6: 138:292758

REFERENCE 7: 138:292750

REFERENCE 8: 138:292746

REFERENCE 9: 138:292744

REFERENCE 10: 138:292589

=> d ide can 12 tot

L2 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2003 ACS
RN 9037-22-3 REGISTRY
CN **Amylopectin (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN Amaizo 839
CN Amioca
CN Amioca WCS
CN C*Pharm 12018
CN Cato 225
CN Cato 240
CN Cato 270
CN Cerestar SF 04201
CN Farinex WM 85
CN Film Kote 54
CN Honen Alpha Waxy Starch
CN Kosol
CN Pectin, amylo
CN Starch, waxy
CN Ultraamylopectin N
CN Ultrasperse A
CN Waxy 7350
CN Waxy Alpha Y
CN Waxy corn starch
CN Waxy maize starch
CN Waxy starch
CN WCS
DR 9050-86-6, 189047-96-9
MF Unspecified
CI PMS, COM, MAN
PCT Manual registration, Polyother, Polyother only
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, PIRA, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
2786 REFERENCES IN FILE CA (1957 TO DATE)
202 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2794 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:292771

REFERENCE 2: 138:286478

REFERENCE 3: 138:286444

REFERENCE 4: 138:286256

REFERENCE 5: 138:286255

REFERENCE 6: 138:283313

REFERENCE 7: 138:276257

REFERENCE 8: 138:276256

REFERENCE 9: 138:276255

REFERENCE 10: 138:270689

L2 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS
RN 9005-82-7 REGISTRY
CN **Amylose (8CI, 9CI)** (CA INDEX NAME)
OTHER NAMES:
CN .alpha.-Amylose
CN Amylose EX 1
CN AS 10
CN AS 110
CN AS 30
CN AS 30 (carbohydrate)
CN AS 320
CN AS 5
CN AS 70
CN EX-I
CN Polyamylose
CN San Super 240L
CN V Amylose
DR 9051-21-2, 9060-22-4, 37243-82-6
MF Unspecified
CI PMS, COM, MAN
PCT Manual registration, Polyother, Polyother only
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DIOGENES, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL, VTB
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
4690 REFERENCES IN FILE CA (1957 TO DATE)
447 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4705 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:292580

REFERENCE 2: 138:292559

REFERENCE 3: 138:292531

REFERENCE 4: 138:286478

REFERENCE 5: 138:286474

REFERENCE 6: 138:286451

REFERENCE 7: 138:286444

REFERENCE 8: 138:286248

REFERENCE 9: 138:276329

REFERENCE 10: 138:276257

=> d his

(FILE 'HOME' ENTERED AT 07:51:42 ON 07 MAY 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 07:51:54 ON 07 MAY 2003
L1 1 S STARCH/CN

```
L2            2 S (AMYLOSE OR AMYLOPECTIN)/CN

     FILE 'HCAPLUS' ENTERED AT 07:52:07 ON 07 MAY 2003
L3        57064 S L1
L4         6016 S L2
L5       137282 S ?STARCH?
L6        12088 S AMYLOSE OR AMYLOPECTIN
L7       139264 S L3,L5
L8        12522 S L4,L6
L9        57409 S ?POTATO?
L10        8215 S (SOLANUM OR S)()TUBEROSUM
                E POTATO/CT
L11       14247 S E3
                E E28+ALL
L12       24586 S E16,E17,E15,E22-E27,E40-E43
L13       57569 S L9-L12
L14       13752 S L7 AND L13
L15        2021 S L8 AND L13
L16       13985 S L14,L15
L17        2635 S L16 AND ?CATION?
L18          79 S L17 AND (?CROSSLINK? OR ?CROSS LINK?)
                E CROSSLINK/CT
L19         216 S E19
                E E15+ALL
L20       48735 S E2
                E E8+ALL
L21         778 S E1
                E E2+ALL
                E E9+ALL
L22       31234 S E3
                E E9+ALL
                E E10+ALL
L23       16055 S E3
                E E11+ALL
                E E11+ALL
L24         678 S E4,E3
                E E9+ALL
                E E12+ALL
L25        4348 S E3,E2+NT
L26          17 S L17 AND L19-L25
L27          79 S L18,L26
L28          24 S L27 AND (RHEOLOG? OR TENSILE STRENGTH OR BEHAVIOR OR FIBERBOA
L29          18 S L27 AND (CHEMICAL MODIFICATION OR MICROPARTICLE OR ADHESIVE O
L30          41 S L28,L29
                SEL DN AN 1 5 7 11 12 17 18 24 25 26 30 31 37 40
L31          14 S L30 AND E1-E40
L32         309 S L16 AND ADHESIV?
L33         139 S L16 AND FLOCCUL?
L34         197 S L16 AND COAGUL?
L35           1 S L16 AND PERSONAL CARE
                E COSMETIC/CT
L36       38857 S E31-E89
                E E31+ALL
L37       58078 S E2,E1+NT
L38       27362 S E25+NT OR E27+NT OR E30+NT OR E31+NT
L39         830 S E26
L40      142369 S COSMETIC#/SC,SX
L41         149 S L16 AND L36-L40
L42         935 S L16 AND PHARMACEUT?/SC,SX
                E SKIN/CT
                E E3+ALL
L43           6 S L16 AND E4+NT
L44           8 S L16 AND (E36+NT OR E37+NT OR E29+NT)
```

```
                E 35+ALL
                E SKIN, DISEASE/CT
                E E3+ALL
L45          16 S L16 AND E4,E5,E3+NT
                E E148+AL
                E E3+ALL
L46           8 S L16 AND E3+NT
                E E16+ALL
L47           1 S L16 AND E3
L48           7 S L16 AND (E7+NT OR E8+NT)
L49        1608 S L32-L35,L41-L48
L50         263 S L49 AND L17
L51          53 S L49 AND (?CROSSLINK? OR ?CROSS LINK?)
L52           9 S L19-L25 AND L49
L53          53 S L51,L52
L54          37 S L53 NOT L27
L55          14 S L54 AND (VERY LIGHTLY OR NONMIGRAT? OR PREGELATIN? OR CANE JU
                SEL DN AN 10 12 13
L56          11 S L55 NOT E1-E9
L57          25 S L31,L35,L56
L58         247 S L50 NOT L27,L51-L57
                SEL DN AN L58 1 3 7 9 11 14 18 23-25 31 37 45 47 49 54 57 58 60
L59          58 S L58 AND E10-E179
L60          83 S L57,L59
                E CHOWDHARY M/AU
L61          30 S E3-E12
                E ECONOMY MUD/PA,CS
L62           3 S E5,E6
                E EC MUD/PA,CS
                E ECO MUD/PA,CS
                E ECON MUD/PA,CS
                E ECONO MUD/PA,CS
                E ECONOM MUD/PA,CS
L63           2 S L61,L62 AND L3-L8
L64           3 S L61 AND L62
L65          25 S L61 NOT L63,L64
                SEL DN AN L65 8
L66           1 S E1-E3
L67          89 S L60,L63,L64,L66 AND L3-L66
L68          65 S L67 AND L3,L4
L69          24 S L67 NOT L68
L70           5 S L69 AND L61-L66
L71          70 S L68,L70
L72          19 S L67 NOT L71

     FILE 'REGISTRY' ENTERED AT 09:15:03 ON 07 MAY 2003

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 09:15:14 ON 07 MAY 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)
```

FILE COVERS 1907 - 7 May 2003 VOL 138 ISS 19
FILE LAST UPDATED: 6 May 2003 (20030506/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l71 all tot

L71 ANSWER 1 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:222319 HCAPLUS
DN 138:240369
TI Guar gum-based fracturing and treatment fluids for petroleum wells
IN **Chowdhary, Manjit S.**; White, Walter M.
PA **Economy Mud Products Company, USA**
SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Ser. No. 146,326.
CODEN: USXXCO
DT Patent
LA English
IC ICM E21B001-00
NCL 507209000
CC 51-2 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 33
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003054963	A1	20030320	US 2002-267895	20021009
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003008780	A1	20030109	US 2002-146326	20020514
PRAI	US 2000-501559	A2	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Well treatment fluids for petroleum wells, esp. fracturing fluids, prepd. by mixing a fast-hydrating high-viscosity guar gum powder to a hydrating liq. The guar gum (or guar deriv.) is then hydrated, a crosslinking agent and/or thickener is added, and the well treating fluid is introduced into the well. The guar gum derivs. are preferably hydroxypropyl guar, carboxymethyl guar, and carboxymethyl hydroxypropyl guar.
ST guar gum crosslinking well fracturing fluid; petroleum well fracturing fluid guar; hydroxypropyl guar crosslinking well fracturing fluid; carboxymethyl guar crosslinking well fracturing fluid
IT Well treatment fluids
(fracturing; guar gum-based fracturing and treatment fluids for petroleum wells)
IT 9000-30-0, Guar gum 39421-75-5, Hydroxypropyl guar gum 39454-79-0, Carboxymethyl hydroxypropyl guar gum 51198-15-3, Carboxymethyl guar gum
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(guar gum-based fracturing and treatment fluids for petroleum wells)

L71 ANSWER 2 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2003:127106** HCAPLUS
DN **138:139193**
TI A soap bar for personal use or laundry containing modified **starch**
IN Kumar, Velayudhan Nair Gopa; Sankholkar, Devadatta Shivaji; Sahni, Sunil Manoharlal
PA Hindustan Lever Limited, India
SO Indian, 37 pp.
CODEN: INXXAP
DT Patent

LA English
IC ICM C11D010-04
ICS C11D009-00
CC 46-2 (Surface Active Agents and Detergents)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI IN 175386	A	19950610	IN 1991-BO347	19911122
PRAI IN 1991-BO347		19911122		

AB A detergent bar for personal use or fabric wash having improved crack resistance, lather and less mush, comprises: (i) 25 to 90 wt% detergent of which at least half, preferably three quarters is soap; (ii) 0.1 to 60 wt% solid structurant at least part of which amounting to at least 0.1 wt%, preferably at least 0.5 wt%, more preferably at least 1 wt% of the bar is modified **starch** such as **starch** acetate, hydroxypropyl **starch** in granular or gelatinized form; (iii) 8 to 40% wt% water, the modified **starch** having been incorporated in the dry state to the detergent material of the bar. The modified **starch** can be derived from any source of **starch** such as rice, **potato** , maize, tapioca, jowar, millets, waxy maize, high **amylose** maize, wheat and the like.
ST soap bar modified **starch** crack resistance; **starch** acetate soap bar; hydroxypropyl **starch** soap bar
IT **Soaps**
RL: TEM (Technical or engineered material use); USES (Uses)
(bars; compn. contg. modified **starch**)
IT 9004-53-9, Dextrin **9005-25-8D, Starch, cationic**, uses **9005-25-8D, Starch**, polymethacrylic acid grafted 9045-28-7, **Starch** acetate 9049-76-7, Hydroxypropyl **starch** 25087-26-7D, Polymethacrylic acid, **starch** grafted 39433-68-6, **Starch** propionate
RL: TEM (Technical or engineered material use); USES (Uses)
(soap bar compn. contg. modified **starch**)

L71 ANSWER 3 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:23513 HCAPLUS
DN 138:92539
TI Hydroxypropyl and carboxymethyl derivatives of powdered guar gum for fracturing of petroleum and natural gas wells
IN **Chowdhary, Manjit S.**; White, Walter M.
PA **Economy Mud Products Company, USA**
SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Pat. Appl. 2002 52,298.
CODEN: USXXCO
DT Patent
LA English
IC ICM E21B001-00
NCL 507209000
CC 51-2 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 4

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003008780	A1	20030109	US 2002-146326	20020514
US 2003017952	A1	20030123	US 2000-501559	20000209
US 2002052298	A1	20020502	US 2001-991356	20011119
US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI US 2000-501559	A3	20000209		
US 2001-991356	A2	20011119		
US 2002-146326	A2	20020514		

AB Petroleum wells and reservoirs are treated with a fracturing fluid prepd. by mixing fast-hydrating high-viscosity powd. guar gum with a hydrating liq., hydrating the powd. guar, mixing a crosslinking agent with the fracturing fluid, and then introducing the fluid into the wellbore. The

LA English
IC ICM C11D010-04
ICS C11D009-00
CC 46-2 (Surface Active Agents and Detergents)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	IN 175386	A	19950610	IN 1991-BO347	19911122
PRAI	IN 1991-BO347		19911122		

AB A detergent bar for personal use or fabric wash having improved crack resistance, lather and less mush, comprises: (i) 25 to 90 wt% detergent of which at least half, preferably three quarters is soap; (ii) 0.1 to 60 wt% solid structurant at least part of which amounting to at least 0.1 wt%, preferably at least 0.5 wt%, more preferably at least 1 wt% of the bar is modified **starch** such as **starch** acetate, hydroxypropyl **starch** in granular or gelatinized form; (iii) 8 to 40% wt% water, the modified **starch** having been incorporated in the dry state to the detergent material of the bar. The modified **starch** can be derived from any source of **starch** such as rice, **potato**, maize, tapioca, jowar, millets, waxy maize, high **amylose** maize, wheat and the like.
ST soap bar modified **starch** crack resistance; **starch** acetate soap bar; hydroxypropyl **starch** soap bar
IT **Soaps**
RL: TEM (Technical or engineered material use); USES (Uses)
(bars; compn. contg. modified **starch**)
IT 9004-53-9, Dextrin **9005-25-8D, Starch, cationic**, uses **9005-25-8D, Starch**, polymethacrylic acid grafted 9045-28-7, **Starch** acetate 9049-76-7, Hydroxypropyl **starch** 25087-26-7D, Polymethacrylic acid, **starch** grafted 39433-68-6, **Starch** propionate
RL: TEM (Technical or engineered material use); USES (Uses)
(soap bar compn. contg. modified **starch**)

L71 ANSWER 3 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:23513 HCAPLUS
DN 138:92539
TI Hydroxypropyl and carboxymethyl derivatives of powdered guar gum for fracturing of petroleum and natural gas wells
IN **Chowdhary, Manjit S.**; White, Walter M.
PA **Economy Mud Products Company, USA**
SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Pat. Appl. 2002 52,298.
CODEN: USXXCO
DT Patent
LA English
IC ICM E21B001-00
NCL 507209000
CC 51-2 (Fossil Fuels, Derivatives, and Related Products)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008780	A1	20030109	US 2002-146326	20020514
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI	US 2000-501559	A3	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Petroleum wells and reservoirs are treated with a fracturing fluid prepd. by mixing fast-hydrating high-viscosity powd. guar gum with a hydrating liq., hydrating the powd. guar, mixing a crosslinking agent with the fracturing fluid, and then introducing the fluid into the wellbore. The

high-viscosity powd. guar gum is selected from hydroxypropyl guar, carboxymethyl guar, and carboxymethyl hydroxypropyl guar gum. In addn., the fracturing fluid can also include a delayed gel breaker, a gelling agent (e.g., borate), and a proppant,.

ST petroleum fracturing fluid hydroxypropyl carboxymethyl guar gum thickener; crosslinked gel breaker guar gum petroleum well fracturing

IT Well treatment fluids
(fracturing; hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

IT Petroleum recovery
(hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

IT 39421-75-5, Hydroxypropyl guar gum 39454-79-0, Carboxymethyl hydroxypropyl guar gum 51198-15-3, Carboxymethyl guar gum
RL: TEM (Technical or engineered material use); USES (Uses)
(fracturing fluid contg.; hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

L71 ANSWER 4 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2002:565012** HCAPLUS
DN **137:97510**
TI **Starch**-based **cationic**-modified composition of **flocculants** or binders for ceramic manufacturing
PA Zuckerforschung Tulln Gesellschaft m.b.H., Austria
SO Austrian, 20 pp.
CODEN: AUXXAK
DT Patent
LA German
IC ICM C04B035-632
CC 57-2 (Ceramics)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	AT 408439	B	20011126	AT 2000-1435	20000821
	WO 2002016285	A1	20020228	WO 2001-AT260	20010801
	WO 2002016285	C2	20021128		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

	AU 2001078299	A5	20020304	AU 2001-78299	20010801
PRAI	AT 2000-1435	A	20000821		
	WO 2001-AT260	W	20010801		

AB The **flocculants** or binders for ceramic slips contains .gtoreq.95% of **amylopectin** of **potato-starch** (AP-PS) esp. AP-PS sulfamate that is **cationic**-modified with electropos. gelating quaternary amino-groups. The AP-PS is manufd. from **potato** using mol. biol., esp. genetic engineering, methods to inhibit the formation of **amylose** using GBSS genes. The AP-PS is used in the etherified or esterified form, and in the form of graft polymer. The AP-PS is linked by epichlorhydrin or 1,3-dichlor-2-propanol mixed with polyamines, or N,N'-dimethylol-N,N'-ethyleneurea mixed with phosphoroxychloride, sodium trimetaphosphate, polyepoxides, adipic acid, glyoxal. The binders based on the AP-PS are suitable for ceramic slips contg. aluminosilicate fibers, alumina, aluminosilicate, and chalk powders, cellulose or polyethylene fibers, and/or colloidal silica. Drying of ceramic formed from such slips is carried out at 300-500.degree. and sintering at 1500-2000.degree..

ST ceramic slip **flocculant** binder **amylopectin** **potatostarch** graft polymer; aluminosilicate fiber alumina chalk silica **starch** polymer

IT Gene, plant
RL: NUU (Other use, unclassified); USES (Uses)
(GBSS; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Synthetic fibers
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum silicate, ceramic component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Fibers
RL: MOA (Modifier or additive use); USES (Uses)
(cellulosic, ceramic slip component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Chalk
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ceramic component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Polyamines
RL: MOA (Modifier or additive use); USES (Uses)
(component of linking agent; **starch**-based **cationic** -modified compn. of **flocculants** or binders for ceramic manufg.)

IT Polyolefin fibers
RL: MOA (Modifier or additive use); USES (Uses)
(ethylene, ceramic slip component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Quaternary ammonium compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**flocculant** modifier; **starch**-based **cationic** -modified compn. of **flocculants** or binders for ceramic manufg.)

IT Polymers, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(graft, **amylopectin** of **potatostarch**; **starch** -based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Viscosity
(of etherified **amylopectin** of **potato-starch** ; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT Epoxides
RL: MOA (Modifier or additive use); USES (Uses)
(polyepoxides, component of linking agent; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 7773-06-0, Ammonium sulfamate
RL: MOA (Modifier or additive use); USES (Uses)
(**cationic** modifier; **starch**-based **cationic** -modified compn. of **flocculants** or binders for ceramic manufg.)

IT 1344-28-1, Alumina, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ceramic component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 7631-86-9, Colloidal silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(colloidal, ceramic slip component; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 96-23-1, 1,3-Dichloro-2-propanol 106-89-8, uses 107-22-2, Glyoxal 123-38-6, Propionaldehyde, uses 124-04-9, Adipic acid, uses 136-84-5, N,N'-Dimethylol-N,N'-ethyleneurea 7785-84-4, Sodium trimetaphosphate 10025-87-3, Phosphoric trichloride
RL: MOA (Modifier or additive use); USES (Uses)
(component of linking agent; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT **9005-25-8, Potato starch**, uses
9037-22-3, Amylopectin
RL: TEM (Technical or engineered material use); USES (Uses)
(**flocculant**; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 3033-77-0, 2,3-Epoxypropyltrimethyl ammonium chloride
RL: MOA (Modifier or additive use); USES (Uses)
(linking agent; **starch**-based **cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

L71 ANSWER 5 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:536397 HCAPLUS
DN 137:64810
TI Guar gum powder possessing improved hydration characteristics
IN **Chowdhary, Manjit**; White, Walter
PA **Economy Mud Products Company, USA**
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DT Patent
LA English
IC E21B033-00
NCL 507209000
CC 44-7 (Industrial Carbohydrates)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2003008780	A1	20030109	US 2002-146326	20020514
	US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI	US 2000-501559	A3	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Disclosed is a guar gum powder product whose manufg. process includes the addnl. step of extruding hydrated and flaked guar splits prior to grinding and drying. The extruding step may be included before or after the step of flaking the splits. The inclusion of the extruding step, along with the flaking step, has been found to create a guar gum powder product which has advantageous properties over the prior art. These advantageous properties include (1) increasing the hydration rate and the hydration acceleration rate of the guar gum powder without any corresponding change in particle size, and (2) providing a hydration acceleration rate this is less affected by cold temps.

ST extruding guar gum process hydration acceleration rate
IT 9000-30-0, Guar gum 11078-30-1, D-Galacto-D-mannan

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(guar gum powder possessing improved hydration rate and process for manuf. including extrusion step)

L71 ANSWER 6 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2002:173857** HCAPLUS
DN **137:21638**
TI Tack and bonding strength of carbohydrate-based **adhesives** from different botanical sources
AU Emengo, F. N.; Chukwu, S. E. R.; Mozie, J.
CS Department of Pure and Industrial Chemistry, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
SO International Journal of Adhesion and Adhesives (2002), 22(2), 93-100
CODEN: IJAADK; ISSN: 0143-7496
PB Elsevier Science Ltd.
DT Journal
LA English
CC 43-6 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 37, 38
AB Modified and un-modified **starch** (I) extd. from root crops, cereals, and a legume were assessed as bases for **adhesives** for paper-paper, paper-cardboard, paper-metal, and paper-glass substrates. **Adhesives** based on un-modified **starch** from all of the crops investigated produced low or high tack for paper-paper and paper-cardboard, depending on the intensity of mech. action/heat applied in the formulation process. None of the I samples produced good tack for paper-metal or paper-glass. **Adhesives** based on I from yam, cassava, **potatoes**, and corn modified by acid moisturizing and roasting produced high tack and bonding strength for paper-paper and paper-glass. The effect of **modification** on these properties is attributable to the decrease in mol. size of the glycosidic chains of I.
ST botanical source effect **starch** based **adhesive** bonding strength tackiness
IT **Adhesive** bonding
Cassava (Manihot esculenta)
Corn
Paper
Paperboard
Potato (Solanum tuberosum)
Rice (Oryza sativa)
Soybean (Glycine max)
Tackiness
Yam (Dioscorea)
(botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
IT Glass, properties
Metals, properties
RL: PRP (Properties)
(botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
IT **Adhesives**
(**starch**-based; botanical source effect on **starch** -based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
IT **9005-25-8, Starch**, uses
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) BS; BS 188 1957
(2) Brutlecht, C; Starch 1966, P22
(3) Chalmers, L; Chemical specialties domestic and industrial 1979, P77
(4) Chalmers, L; Chemical specialties domestic and industrial 1979, P80
(5) Colins, E; Experiments in polymer chemistry 1973, P363
(6) Heinrich, H; Westfalia Separator 1981, P15
(7) Osuji, G; Advances in yam research 1985, P25
(8) Schoch, T; Cereal chemistry 1941, P1
(9) Shields, J; Adhesives handbook 1976, P1
(10) Skeist, I; Handbook of adhesives 2nd ed 1975
(11) Wake, W; Adhesion and adhesives: fundamentals and practice 1954, P25

L71 ANSWER 7 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2002:142955** HCAPLUS
DN **136:169246**
TI Use of **starch** compositions in **papermaking** as wet end additives
IN Anderson, Kevin Ray; Garlie, David Edward
PA Cargill Incorporated, USA
SO PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM D21H017-29
ICS D21H023-06
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 44
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002014602	A1	20020221	WO 2001-US12937	20010420
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6451170	B1	20020917	US 2000-635962	20000810
	US 2002088585	A1	20020711	US 2000-740278	20001219
	US 6524440	B2	20030225		
	AU 2001057144	A5	20020225	AU 2001-57144	20010420
PRAI	US 2000-635962	A	20000810		
	US 2000-740278	A	20001219		
	WO 2001-US12937	W	20010420		

AB **Starch** compns., including **cationic crosslinked starches**, and methods of using those **starches** in the wet end system of a paper machine are disclosed. The **starch** compns. of the disclosure are particularly adapted for customization for specific wet end systems such as drainage and retention aids, and allow for **modification** to correspond to variations in the wet end of the papermaking machine. The **starch** compns. of the disclosure possess properties permitting them to be modified during cooking to improve performance during the papermaking process. The **starch** can be selected from a variety of **starches**, including corn (such as waxy corn or dent corn), **potato**, sorghum, tapioca, wheat, rice, etc. The **starch** is preferably a corn **starch**, and typically a dent corn **starch**, and more typically a **cationized** dent corn **starch**. The **crosslinked starch** permits a greater range in particle sizes compared to non-

crosslinked starch. This range of particle sizes allows greater opportunity to improve wet-end performance. It is believed that improved performance is obtained when **starch** particle size closely correlates to that of other particles in the furnish.

ST **starch cationized crosslinked** papermaking wet end additive; drainage retention aid **cationized crosslinked starch** papermaking

IT Paper
(use of **starch** compns. in papermaking)

IT **9005-25-8D, Starch, cationized, crosslinked**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(use of **starch** compns. in papermaking)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Karppi, A; WO 9833977 A 1998 HCAPLUS

(2) Nat Starch Chem Invest; EP 0603727 A 1994 HCAPLUS

L71 ANSWER 8 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **2002:10381** HCAPLUS

DN **136:90642**

TI Compns., methods and kits comprising primary **coagulant** material and bridging **flocculant** material for purifying, clarifying and/or nutrifying contaminated drinking water

IN Souter, Philip Frank; Ure, Colin

PA Procter & Gamble Co., USA

SO PCT Int. Appl., 47 pp.
CODEN: PIXXD2

DT Patent

LA English

IC ICM C02F001-56
ICS C02F001-52; C02F001-00

CC 61-5 (Water)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002000557	A2	20020103	WO 2001-US19879	20010621
	WO 2002000557	A3	20020627		
	W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	GB 2364047	A1	20020116	GB 2000-15569	20000627
	GB 2364048	A1	20020116	GB 2000-15571	20000627
	EP 1294644	A2	20030326	EP 2001-946639	20010621
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	GB 2000-15569	A	20000627		
	GB 2000-15571	A	20000627		
	GB 2000-27214	A	20001108		
	WO 2001-US19879	W	20010621		

AB Compns., methods and kits for purifying and clarifying and/or nutrifying contaminated drinking water and which comprise a primary **coagulant** material and a bridging **flocculent** material, the levels and ratios of **coagulant** to **flocculent** preferably falling within certain ranges. The compns. and kits are esp. designed for

personal or domestic use in the batchwise purifn. and **clarification** of relatively small predetd. vols. of contaminated drinking water. Highly preferred compns. also contain one or more of a **cationic coagulant** aid, esp. chitosan, a microbiocidal disinfectant, a water-sol. alkali, a water-insol. silicate, and a food additive or nutrient source. A compn. for purifying and clarifying contaminated drinking water and which comprises: (i) a primary **coagulant** selected from the group consisting of water-sol., multivalent inorg. salts and mixts. thereof; (ii) a bridging **flocculant** selected from the group consisting of water-sol. and water- dispersible anionic and nonionic polymers having a wt. av. mol. wt. of at least about 2,000,000, and mixts. thereof; (iii) a **coagulant** aid selected from the group consisting of water-sol. and water-dispersible **cationic** polymers having a wt. av. mol. wt. of less than about 1,500,000, and mixts. thereof; and optionally one or more of (iv) a microbiocidal disinfectant; (v) a water-sol. alkali; (vi) a water-insol. silicate selected from clays, zeolites and mixts. thereof; and (vii) a food additive or nutrient source.

ST **flocculation coagulation** compn contaminated drinking water purifn

IT Polyelectrolytes
(anionic, with ave. mol. wt. .gtoreq. 2,000,000; water-sol. or water-dispersible polymeric bridging **flocculants** in compns. for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Polyelectrolytes
(**cationic**, with ave. mol. wt. < about 1,500,000; water-sol. or water-dispersible polymeric **coagulants** in compns. for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(**coagulation**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT X zeolites
RL: NUU (Other use, unclassified); USES (Uses)
(compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Disinfectants
Food additives
Nutrients
(compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Humic acids
RL: REM (Removal or disposal); PROC (Process)
(compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Cryptosporidium parvum
Giardia
(cysts; removal of; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(filtration; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Organic matter
(**flocculation** of; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(**flocculation**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(non-ionic; water-sol. or water-dispersible polymeric bridging **flocculants**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(sterilization and disinfection; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)
IT **9005-25-8, Potato starch,** uses
RL: NUU (Other use, unclassified); USES (Uses)
(**Cationic** modified; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 58740-43-5, Magnafloc 351 62449-27-8, Magnafloc LT20 64925-87-7, Magnafloc LT 26 68189-92-4, Magnafloc LT25 136602-60-3, Magnafloc 919
RL: NUU (Other use, unclassified); USES (Uses)
(bridging **flocculant**; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 9012-76-4, Chitosan
RL: NUU (Other use, unclassified); USES (Uses)
(**coagulant** aid; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 144-55-8, Sodium bicarbonate, uses 1318-93-0, Montmorillonite, uses 16984-48-8, Fluoride, uses
RL: NUU (Other use, unclassified); USES (Uses)
(compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 7553-56-2, Iodine, uses 7778-54-3, Calcium hypochlorite
RL: NUU (Other use, unclassified); USES (Uses)
(disinfectant; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 497-19-8, Sodium carbonate, uses
RL: NUU (Other use, unclassified); USES (Uses)
(effervescing dispersant; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 12173-47-6, Hectorite
RL: NUU (Other use, unclassified); USES (Uses)
(**flocculation** aid; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 9004-34-6, Cellulose, uses
RL: NUU (Other use, unclassified); USES (Uses)
(powd.; **flocculant** aid; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)
IT 1327-41-9, Polyaluminum chloride 1344-67-8, Copper chloride 7446-70-0, Aluminum chloride, uses 7758-98-7, Copper sulfate, uses 7785-87-7, Manganese sulfate 10043-01-3, Aluminum sulfate 10124-49-9, Iron sulfate 12040-57-2, Iron chloride 55892-56-3, Sulfuric acid, aluminum salt, basic
RL: NUU (Other use, unclassified); USES (Uses)
(primary **coagulant**; compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)

L71 ANSWER 9 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:563771** HCAPLUS
DN **135:157364**
TI Cosmetic compositions containing an amphoteric **starch** and a **cationic** conditioning agent
IN Douin, Veronique; Chesneau, Laurent; Descoster, Sandrine
PA L'Oreal S.A., Fr.
SO Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DT Patent
LA French
IC ICM A61K007-06
CC 62-3 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120103	A1	20010801	EP 2000-403529	20001214

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

	FR 2803745	A1	20010720	FR 2000-409	20000113
	FR 2803745	B1	20020315		
	AU 745595	B2	20020321	AU 2000-72465	20001221
	BR 2001000259	A	20010821	BR 2001-259	20010108
	CN 1305801	A	20010801	CN 2001-103011	20010112
	JP 2001226217	A2	20010821	JP 2001-7088	20010115
	US 2001031270	A1	20011018	US 2001-759165	20010116
	US 20020176875	A9	20021128		
PRAI	FR 2000-409	A	20000113		

OS MARPAT 135:157364

AB Cosmetic compns. contg. an amphoteric **starch** and a **cationic** conditioning agent chosen from quaternary ammonium surfactants and **cationic** polymers having quaternary ammonium group, and **cationic** silicones. A shampoo contained **potato starch** modified by 2-chloroethyl aminodipropionic acid 1.5, diallyl di-Me ammonium chloride homopolymer (Merquat 100) 0.5, and water q.s. 100.0 g.

ST cosmetic shampoo amphoteric **starch cationic** conditioner

IT Onium compounds
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(4,5-dihydro-1-methyl-2-nortallow alkyl-1-(2-tallow amidoethyl) imidazolium, Me sulfates, quaternium 87; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Onium compounds
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(4,5-dihydro-2-(hydrogenated nortallow alkyl)-1-[2-(hydrogenated tallow amido)ethyl]-1-methylimidazolium Me sulfates, quaternium 83; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
([(aminoethyl)amino]propyl hydroxy, di-Me, amodimethicone; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(amino-contg.; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes
Surfactants
(amphoteric; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes
Surfactants
(anionic; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes
Surfactants
(**cationic**; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT **Hair preparations**
(conditioners; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Perfumes
Preservatives
Shampoos

Sunscreens
Thickening agents
(cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT Glycols, biological studies
Polymers, biological studies
Polysiloxanes, biological studies
Protein hydrolyzates
Proteins, general, biological studies
Vitamins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT Onium compounds
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(imidazolium compds., 2-(C9-19 and C9-19-unsatd. alkyl)-1-[(C10-20 and C10-20-unsatd. amido)ethyl]-4,5-dihydro-1-Me, Me sulfates, Quaternium 87, Rewoquat PG 75; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT Surfactants
(nonionic; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT Quaternary ammonium compounds, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polymers; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT 68921-83-5
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(Ceraphyl 70; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
IT 81-13-0, panthenol **9005-25-8D**, **Starch**, amphoteric, biological studies 17301-53-0, Behenyltrimethyl ammonium chloride 25136-75-8, Merquat 3300 ' 26062-79-3, Merquat 100 28299-33-4D, Imidazoline, quaternary ammonium derivs. 36332-93-1, methyl 18 eicosanoic acid 65497-29-2, jaguar c13s 145686-74-4D, q2 5200, quaternary ammonium derivs. 203341-07-5, dow corning 939
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) L'Oreal; EP 0797979 A 1997 HCAPLUS
(2) National Starch; http://www.nationalstarch.com/solan.htm/ 2000
(3) National Starch And Chem Corp; EP 0689829 A 1995 HCAPLUS
(4) National Starch And Chem Corp; EP 0948960 A 1999 HCAPLUS

L71 ANSWER 10 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:562711** HCAPLUS
DN **136:284311**
TI Evaluation of pregelatinized **starch** as excipient for improving dissolution rate and efficiency of nimodipine
AU Rao, N. Rama; Chowdary, K. P. R.
CS Siddhartha College of Pharmaceutical Sciences, Vijayawada, 10, India

SO International Journal of Pharmaceutical Excipients (1999), 1(1), 20-24
CODEN: IJPEC4
PB ENAR Foundation Research Centre
DT Journal
LA English
CC 63-6 (**Pharmaceuticals**)
AB The objective of the study is to prep. and evaluate pregelatinized **starch** (PGS) as excipient for improving the dissoln. rate and efficiency of nimodipine (NM), a practically insol. drug. PGS was prepd. by a known method of heating an aq. slurry of **potato starch** in the presence of Tween-80 and subsequent drying. PGS was found to be easily dispersible in water. The PGS prepd. fulfilled official **identification** tests. Dispersions of nimodipine PGS were prepd. and the dispersions were evaluated for content uniformity, drug-excipient interactions by IR spectra and DTA studies, phys. state of the drug in dispersions by XRD and DSC, dissoln. rate and efficiency. Marked increase in the dissoln. rate and efficiency of nimodipine was obsd. with dispersions in comparison to its phys. mixt. and pure drug. Dissoln. of nimodipine from the dispersions obeyed first order kinetics.
ST nimodipine pregelatinized **starch** excipient dispersion dissoln
IT Dispersion (of materials)
Dissolution
Drug interactions
(pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
IT Drug delivery systems
(solid dispersions; pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
IT 9005-65-6, Tween-80
RL: MOA (Modifier or additive use); USES (Uses)
(pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
IT **9005-25-8**, **Starch**, biological studies 66085-59-4, Nimodipine
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; Handbook of Pharmaceutical excipients, 2nd Ed 1994, P491
(2) Atsuya, Y; Chem Pharm Bull 1990, V38, P176
(3) Chowdary, K; Indian Drugs 1995, V11, P537
(4) Chowdary, K; Indian Drugs 1998, V6, P368
(5) Cohen, J; J Pharm Sci 1963, V52, P132 HCAPLUS
(6) Khan, K; J Pharma Pharmacol 1975, V27, P48 HCAPLUS
(7) Oosten, B; Starch/Starke 1982, V34, P233 HCAPLUS
(8) Schmidt, P; Acta Pharm Technol 1988, V34, P22 HCAPLUS
(9) Sekulovic, D; Pharmaize 1987, V42, P556 HCAPLUS
(10) Symecko, C; Drug Dev Ind Pharm 1997, V23, P229 HCAPLUS
(11) Tarimci, N; Pharmaize 1988, V43, P323 HCAPLUS
(12) U S Pharmacopoeial conversion Inc; The United States Pharmacopoeia, 23rd Ed 1995
(13) Underwood, T; J Pharm Sci 1972, V62, P239

L71 ANSWER 11 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:559554** HCAPLUS
DN **135:141957**
TI Cosmetic detergent compositions containing a chosen amphoteric **starch**
IN Maubru, Mireille; Beauquey, Bernard; Douin, Veronique
PA L'Oreal S.A., Fr.
SO Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW
DT Patent
LA French
IC ICM A61K007-06
CC 62-3 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120104	A1	20010801	EP 2000-403530	20001214
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	FR 2803744	A1	20010720	FR 2000-411	20000113
	AU 746456	B2	20020502	AU 2000-72397	20001220
	BR 2001000265	A	20010821	BR 2001-265	20010110
	CN 1307860	A	20010815	CN 2001-103377	20010112
	RU 2193389	C2	20021127	RU 2001-101415	20010112
	JP 2001233744	A2	20010828	JP 2001-7087	20010115
	US 2002034487	A1	20020321	US 2001-759530	20010116
PRAI	FR 2000-411	A	20000113		

OS MARPAT 135:141957
AB Cosmetic detergent compns. contg. a chosen amphoteric **starch** are claimed (Markush structure given). A shampoo contained sodium lauryl ether sulfate 15, **potato starch** modified with 2-chloroethyl aminodipropionic acid neutralized with sodium hydroxide 0.5, JR-400 0.4, hydroxyethyl cellulose 0.4, citric acid q.s. pH = 7, and water q.s. 100 g.
ST cosmetic shampoo detergent amphoteric **starch**
IT Amides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(N-(hydroxyalkyl); cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
([(aminoethyl)amino]propyl hydroxy, di-Me; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(alkyl aryl; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(alkyl; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polyelectrolytes
Surfactants
(amphoteric; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(animal; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polyelectrolytes
Surfactants
(anionic; cosmetic detergent compns. contg. chosen amphoteric **starch**)
IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(aryl; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Polyelectrolytes
(**cationic**; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Polysaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**cationic**; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Detergents
Shampoos
(cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Ceramides
Fatty acids, biological studies
Glycols, biological studies
Paraffin oils
Polymers, biological studies
Polysiloxanes, biological studies
Protein hydrolyzates
Proteins, general, biological studies
Vitamins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy-terminated; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Surfactants
(nonionic; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(vegetable; cosmetic detergent compns. contg. chosen amphoteric **starch**)

IT 81-13-0, panthenol 111-42-2, diethanolamine, biological studies
9004-34-6D, Cellulose, quaternary ammonium salts, biological studies
9004-62-0, Hydroxyethyl cellulose 9004-82-4, Polyoxyethylene sodium lauryl ether sulfate **9005-25-8D**, **Starch**, amphoteric, biological studies 9016-00-6D, Polydimethylsiloxane, trimethylsilyl-terminated 26062-79-3 26590-05-6 29297-55-0, Vinylimidazole vinylpyrrolidone copolymer 31900-57-9D, Polydimethylsiloxane, trimethylsilyl-terminated 36332-93-1, methyl 18 eicosanoic acid 65497-29-2, jaguar c 13s 81859-24-7 156048-34-9 156048-35-0 203341-07-5, dow corning 939
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic detergent compns. contg. chosen amphoteric **starch**)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Henkel Kgaa; DE 19816665 A 1999 HCAPLUS
(2) Imperial Chemical Ind Plc; WO 0033806 A 2000 HCAPLUS
(3) Kao Corp; JP 05132410 A 1993 HCAPLUS
(4) Kao Corp; JP 05132695 A 1993 HCAPLUS
(5) National Starch And Chem Corp; EP 0689829 A 1996 HCAPLUS

L71 ANSWER 12 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:412278** HCAPLUS
DN **135:241205**
TI **Starch**-based **microparticles**: a preliminary study of the structure and properties
AU Van Soest, J. J. G.; Dziechciarek, Y.; Philipse, A. P.
CS Agrotechnol. Res. Inst., Wageningen, 6700 AA, Neth.
SO Zywnosc (2000), 7(2, Supl.), 213-225
CODEN: ZYWNFL
PB Polskie Towarzystwo Technologow Zywnosci, Oddzial Malopolski
DT Journal
LA English
CC 17-11 (Food and Feed Chemistry)
AB **Starch** is a cheap and abundant polysaccharide, which is found in nature as water insol. semicryst. granules with sizes in the range of 0.5-70 .mu.m. Although **starch** is easily gelatinized or dissolved in water, it is not possible to obtain stable suspensions or colloidal systems from native **starches**. This inherent disadvantage of **starch** has limited its **applications**. In this study **potato starches** were processed to obtain fully biodegradable microparticles, which behave as microgels or colloids in aq. suspensions. The process is based on the unique combination of gelatinization and **crosslinking** performed in water-oil emulsions. The obtained **starches** are very stable in water and show an interesting shear-thinning behavior, even at high solid contents. The rheol. behavior of the new **starches** is unique. The **starches** offer new possibilities for prepg. **starch** colloids with a range of properties. A range of **starch** microparticles was obtained opening the door to numerous food and non-food markets (paints and coatings, inks and pigments, superabsorbent polymers, food additives, **personal care** products, pharmaceuticals, ceramics, paper additives, **adhesives**, thickeners, emulsifiers, ...). The final goal of this work is to establish the relationships between synthesis parameters and the structural, colloidal and theol. features. Particles were prepd. using epichlorohydrin and trisodium trimetaphosphate as **cross-linkers**. In this paper important reaction parameters, such as temp., time and compn. of the reactants (**starch**, **cross-linker**, hydroxide), which influence the structure of the microparticles during synthesis, were identified. Using Bohlin rheometry the formation of the **starch** network structure was studied. Particle sizes of the microgels are in the range of 60 nm up to 10 .mu.m. The synthesized particles were slightly neg. (in the range of - 5 to - 45 mV). Features such as size and charge of the particles depended on the type and amt. of **cross-linker** used. Descriptions of the theol. properties of **starch**-based microparticles in aq. suspensions, both in dil. and concd. systems, were given. The microgel-type particles showed a behavior that is typical for (slightly) charged materials or polyelectrolytes.
ST **starch** microparticle microgel
IT Viscosity
(of **starch**-based microparticles)
IT Microparticles
(prepn. and properties of **starch**-based microparticles)
IT Colloids
Microgels
(**starch**-based microparticles as)
IT 106-89-8, Epichlorohydrin, reactions 7785-84-4, Trisodium trimetaphosphate
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinking** agent in prepn. of **starch**-based microparticles)

IT **9005-25-8, Starch**, biological studies
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(prepn. and properties of **starch**-based microparticles)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Antonietti, M; J Chem Phys 1996, V105, P7795 HCAPLUS
(2) Arshady, R; Pol Engin Sci 1989, V29, P1746 HCAPLUS
(3) Baensch, J; WO 9603057 1996 HCAPLUS
(4) Chitumbo, K; J Pol Sci 1971, VC36, P297
(5) Ellis, R; J Sci Food Agric 1998, V77, P289 HCAPLUS
(6) Galliard, T; Starch:Properties and potential 1987, P1
(7) Green, B; US 2800457 HCAPLUS
(8) Gunther, W; WO 9725073 1997 HCAPLUS
(9) Jane, J; J Macromol Sci Pure Appl Chem 1995, V4(A32), P751
(10) Jiugao, Y; Starch 1994, V46, P252
(11) Kulicke, W; Polym Mater Sci Engin 1987, V57, P265 HCAPLUS
(12) Kulicke, W; Starch 1989, V41, P140 HCAPLUS
(13) Kulicke, W; Starch 1990, V42, P134 HCAPLUS
(14) Lycklema, J; Fundamentals of Interface and Colloidal Science, Chpt 2 VII
(15) Porath, J; J Chrom 1971, V60, P167 HCAPLUS
(16) Soest, J; WO 9901214 A1 1999 HCAPLUS
(17) Soest, J; Carboh Res 1995, V279, P201
(18) Soest, J; Second World Congress on Emulsion 1997, 1-1-366/01-05
(19) van der Zee, M; Structure-biodegradability relationships of polymeric materials 1997, P1
(20) Velazquez, J; WO 9955819 1999 HCAPLUS
(21) Wolfe, M; J Coll Interface Sci 1989, V133, P265 HCAPLUS

L71 ANSWER 13 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:228662 HCAPLUS
DN 134:265543
TI **Starch product**
IN Bergsma, Jacob; Aten, Jan; Bleeker, Ido Pieter
PA Cooeperatieve Verkoop- en Productievereniging Van Aardappelmeel en Derivaten, Neth.
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A23L001-09
ICS A23L001-0522; C08B030-12; A61K009-48; C12P019-16
CC 17-6 (Food and Feed Chemistry)
Section cross-reference(s): **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001021011	A1	20010329	WO 2000-NL653	20000914

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI EP 1999-203058 A 19990917
AB The invention relates to a process for prepg. a **starch** product, wherein native **starch** or **crosslinked starch** in substantially ungelatinized state is treated with a debranching enzyme. The invention further relates to a **starch** product obtainable by said process and the use thereof in foods and pharmaceutical compns.

ST **starch** debranched food drug
IT Drugs
(additives; **starch** product)
IT Organelle
(**starch** granule; **starch** product)
IT Arrowroot
Barley
Cassava (Manihot esculenta)
Corn
Food additives
Food rheology
Food texture
Oat
Potato (Solanum tuberosum)
Rice (Oryza sativa)
Sago palm
Wheat
(**starch** product)
IT 9075-68-7, Pullulanase
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(Optimax 300L; **starch** product)
IT 9000-90-2, .alpha.-Amylase
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(maltogenic; **starch** product)
IT **9005-25-8D**, **Starch**, debranched, biological studies
9067-73-6, Isoamylase
RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**starch** product)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Haralampu, S; US 5849090 A 1998 HCAPLUS
(2) Holik, D; US 3922196 A 1975 HCAPLUS
(3) Jane, J; CEREAL CHEMISTRY 1992, V69(4), P405 HCAPLUS
(4) Kimura, A; CARBOHYDRATE RESEARCH 1996, V287, P255 HCAPLUS
(5) Nat Starch Chem Invest; EP 0480433 A 1992 HCAPLUS
(6) Nat Starch Chem Invest; EP 0616778 A 1994
(7) Nat Starch Chem Invest; EP 0806434 A 1997 HCAPLUS
(8) Wai-Chiu, C; US 5468286 A 1995 HCAPLUS

L71 ANSWER 14 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:208135 HCAPLUS
DN 134:236644
TI Shear thickening **pregelatinized starch**
IN Brine, Charles J.; Tieleman, Anne E.; Wood, Robert W.
PA Avebe America, Inc., USA
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K047-36
ICS A23L001-0522; C08B030-00; C08L003-04; C08L003-06; C08L003-08
CC 17-6 (Food and Feed Chemistry)
Section cross-reference(s): 44
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001019404	A1	20010322	WO 2000-US25343	20000915
	WO 2001019404	C2	20021107		

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,
MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1128846 A1 20010905 EP 2000-965046 20000915
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO
PRAI US 1999-154081P P 19990915
WO 2000-US25343 W 20000915
AB A new **starch** exhibits shear-thickening properties. It is a pregelatinized, cold water swelling **starch**, comprising: a highly **cross linked**, stabilized **starch** processed by heating to render it cold water swelling and leaving a majority of the **starch** granules intact. According to the process a highly **cross linked starch** is obtained. Then, the **starch** is heated under conditions of time, temp. and moisture effective to disrupt less than 50 % of intact **starch** granules comprised in said **starch** and to provide the characteristic that when a slurry of said **starch** is subjected to moderate to high shear the viscosity will increase toward a max. The **starch** is used in salad dressings and a skin lotion.
ST **starch** shear thickened pregelatinized
IT Arrowroot
Cassava (Manihot esculenta)
Cosmetics
Food
Mixing
Potato (Solanum tuberosum)
Yam (Dioscorea)
(shear thickening pregelatinized **starch**)
IT **9005-25-8, Starch**, biological studies
RL: BUU (Biological use, unclassified); FFD (Food or feed use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(shear thickening pregelatinized **starch**)
IT 7785-84-4, Sodium trimetaphosphate 10025-87-3, Phosphorus oxychloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(shear thickening pregelatinized **starch**)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Pitchon; US 4280851 A 1981 HCAPLUS
(2) Schara; US 4847371 A 1989 HCAPLUS

L71 ANSWER 15 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:808498** HCAPLUS
DN **133:355000**
TI Cosmetic compositions containing modified **starch**
IN Grafe, Jurgen E.
PA Grafe Chemie G.m.b.H., Germany
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM A61K007-48
ICS A61K007-06
CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1051967	A2	20001115	EP 2000-109712	20000508

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO
DE 19921707 A1 20001116 DE 1999-19921707 19990512
PRAI DE 1999-19921707 A 19990512
AB Cosmetic compns. such as shower gels, conditioning shampoos, and creams contain modified **starch** in acceptable medium. The medium can be a shampoo contg. a surfactant. Thus, a shower gel contained coco betaine 10.00, Na laureth sulfate 33.50,PPG-5 laureth-5 4.00, dimethicone copolyol 4.00, cocoamide-DEA 3.50, modified **potato starch** 0.50, preservatives and perfumes and citric acid qs, and water to 100%.
ST cosmetic modified **starch**
IT Surfactants
(anionic; cosmetic compns. contg. modified **starch**)
IT Surfactants
(**cationic**; cosmetic compns. contg. modified **starch**)
IT **Shampoos**
(conditioning; cosmetic compns. contg. modified **starch**)
IT **Bath preparations**
Cosmetics
Detergents
Shampoos
(cosmetic compns. contg. modified **starch**)
IT **Cosmetics**
(**creams**; cosmetic compns. contg. modified **starch**)
IT **Bath preparations**
(gels; cosmetic compns. contg. modified **starch**)
IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy; cosmetic compns. contg. modified **starch**)
IT **Soaps**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(liq.; cosmetic compns. contg. modified **starch**)
IT **Cosmetics**
(**lotions**; cosmetic compns. contg. modified **starch**)
IT Surfactants
(nonionic; cosmetic compns. contg. modified **starch**)
IT 50-21-5, Lactic acid, biological studies 57-13-6, Urea, biological studies 72-17-3, Sodium lactate 77-92-9, Citric acid, biological studies **9005-25-8D**, **Starch**, modified, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic compns. contg. modified **starch**)

L71 ANSWER 16 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:227385 HCAPLUS
DN 132:252697
TI **Potato starch amylopectin**-based **adhesives** and **preproducts**
IN Wastyn, Marnik Michel; Kozich, Martin; Grull, Dietmar
PA Sudzucker Aktiengesellschaft Mannheim/Ochsenfurt, Germany
SO Eur. Pat. Appl., 21 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C09J103-12
ICS C09J103-14; C08B035-00; C08B031-00
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 38
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI EP 990687 A2 20000405 EP 1999-890313 19990930
EP 990687 A3 20001102
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI AT 1998-1636 A 19981001
AB **Adhesives** which can be dried by evapn. of moisture are based on **amylopectin** derived from **potato starch**, and can also contain appropriate additives. An **adhesive** contg. dextrinated **amylopectin** 300, hydrolyzed **amylopectin** 400, H2O 300, and preservative 0.3 g had viscosity 3.420 Pa-s at 23.degree..
ST **potato starch amylopectin adhesive** ; dextrinated **amylopectin adhesive**; **crosslinking amylopectin adhesive**
IT Paperboard
(corrugated; **potato starch amylopectin** -based **adhesives** for corrugated paperboard)
IT Books
(manuf., binding; **potato starch amylopectin** -based **adhesives** for bookbinding)
IT **Adhesives**
(**potato starch amylopectin**-based **adhesives** and preproducts)
IT Carpets
(**potato starch amylopectin**-based **adhesives** for carpets)
IT Aldehydes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reaction products with **amylopectin**; **crosslinked potato starch amylopectin**-based **adhesives** and preproducts)
IT 106-89-8D, Epichlorohydrin, reaction products with **amylopectin**
124-04-9D, Adipic acid, reaction products with **amylopectin**
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinked potato starch amylopectin**-based **adhesives** and preproducts)
IT **9037-22-3, Amylopectin 9037-22-3D**, **Amylopectin**, hydrolyzed and **crosslinked** 9074-24-2, Carboxymethyl **amylopectin** 56448-79-4 74315-67-6D, degraded 80940-93-8, 2-Cyanoethyl **amylopectin** 101658-51-9, Methyl **amylopectin** 202217-51-4, Ethyl **amylopectin** 262857-87-4, 2-Hydroxybutyl **amylopectin**
RL: TEM (Technical or engineered material use); USES (Uses)
(**potato starch amylopectin**-based **adhesives** and preproducts)

L71 ANSWER 17 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:216444** HCAPLUS
DN **132:252650**
TI Development of **crosslinked cationic starches** and evaluation of their performance in the **microparticle** retention system
AU Kim, Tae Young; Lee, Hak Lae
CS Department of Forest Products, College of Agriculture and Life Sciences, Seoul National University, Suwon, 441-744, S. Korea
SO Polpu, Chongi Gisul (1999), 31(5), 24-30
CODEN: PCGIDY; ISSN: 0253-3200
PB Korea Technical Association of the Pulp and Paper Industry
DT Journal
LA English
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 44
AB **Crosslinked** corn **starch** (I) samples were prepd. to

increase their mol. wts. and their performance as a component of the Compozil microparticle retention system for papermaking was evaluated and compared with that of **potato** I samples. It was shown that greater improvements in retention and strength properties could be achieved when **crosslinked cationic** corn I was used rather than conventional **cationic potato** I, esp. at high cond., because of their mol. rigidity.

ST **cationic starch crosslinking** effect paper fines retention strength

IT **Crosslinking**
Microparticles
Paper
Tensile strength
(**cationic starch crosslinking** effect on fines retention and paper strength)

IT **9005-25-8, Starch**, reactions
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(**cationic; cationic starch crosslinking** effect on fines retention and paper strength)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Andersson, K; Nordic Pulp and Paper Research Journal 1996, V11(1), P18
(2) Au, C; Pulp & Paper Canada 1993, V94(6), PT175
(3) Beaudoin, R; JPPS 1995, V21(7), PJ238 HCAPLUS
(4) Fitzgibbones, N; Papermakers Conference Proceedings 1994, P239
(5) Glittenberg, D; Papermakers Conference Proceedings 1995, P197
(6) Howard, R; JPPS 1989, V15(6) HCAPLUS
(7) Moberg, K; Retention and Drainage Short Course Note 1989, P65
(8) Moffett, R; Tappi J 1994, V77(12), P133 HCAPLUS
(9) Swerin, A; Paperi ja Puu 1995, V77(4), P215 HCAPLUS
(10) Wackerberg, E; Pulp & Paper Canada 1994, V95(7), PT44

L71 ANSWER 18 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **2000:134518** HCAPLUS

DN **132:141609**

TI Water **purification** by **flocculation** and/or **coagulation**

IN Gomes de Oliveira, Joao Carlos; Kiyoshiuchima, Milton
PA Brazil

SO Braz. Pedido PI, 13 pp.
CODEN: BPXXDX

DT Patent

LA Portuguese

IC ICM C02F001-52

CC 61-5 (Water)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI BR 9702430	A	19990309	BR 1997-2430	19970711
PRAI BR 1997-2430		19970711		

AB Polluted waters are treated with **flocculation** and/or **coagulation** agents (e.g., lime, ferric chloride, aluminum sulfate, polymers, ETA salts, **potato starch**, etc.) and rapidly mixed to form a floc. The water is aerated to improve **flocculation** and the floc is removed. The process is adapted to a continuously flowing stream.

ST water **flocculation coagulation**

IT Water **purification**
(**coagulation**; water purifn. by **flocculation** and/or **coagulation**)

IT Water **purification**
(**flocculation**; water purifn. by **flocculation** and/or **coagulation**)

IT Lime (chemical)
Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(water purifn. by **flocculation** and/or **coagulation**)
IT 60-00-4, EdTA, uses 7705-08-0, Ferric chloride, uses **9005-25-8**, **Starch**, uses 10043-01-3, Aluminum sulfate
RL: NUU (Other use, unclassified); USES (Uses)
(water purifn. by **flocculation** and/or **coagulation**)

L71 ANSWER 19 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1999:194185** HCAPLUS
DN **130:239097**
TI Manufacture of absorbing material based on **starch** having improved **absorbent properties**
IN Feil, Herman; Van Soest, Jeroen Johannes Gerardu; Van Schijndel, Renee Josie Gide
PA Instituut voor Agrotechnologisch Onderzoek (Ato-Dlo), Neth.
SO PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08B031-00
ICS A61L015-00
CC 44-6 (Industrial Carbohydrates)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9912976	A1	19990318	WO 1998-NL510	19980907
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 900807	A1	19990310	EP 1997-202735	19970905
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	AU 9890080	A1	19990329	AU 1998-90080	19980907
PRAI	EP 1997-202735		19970905		
	WO 1998-NL510		19980907		

AB A biodegradable polymer with high H2O-absorbing capacity is based on **starch** or **starch** derivs. wherein the **starch** has not been chem. modified or only to a degree of substitution <0.2. The material has a H2O-absorbing power of .gtoreq.10 times its own wt. and a half of the H2O absorption is attained within 3 min. The material is manufd. by modifying and treating the **starch** in a co-continuous H2O-oil or oil-H2O system (an emulsion where both phases are continuous or quasi-continuous) in such a way that an open, slightly **crosslinked** structure is fixated. For example, dispersing granular **potato starch** in H2O, adding Na3P3O9, dispersing the mixt. with stirring in paraffin oil, adding 2M NaOH and neutralizing after 23 h with AcOH gave a product having H2O absorption 89 g/g (in 2 h; 82% absorbed within the 1st h) and 0.9% aq. NaCl soln. absorption 20 g/g within 1 h (81% absorbed within the 1st 5 min).
ST **starch modification crosslinking** trisodium trimetaphosphate absorbent manuf; sodium trimetaphosphate **crosslinking starch** absorbent manuf; water oil emulsion **starch modification crosslinking** trisodium trimetaphosphate absorbent
IT Biodegradable materials
(absorbents; manuf. of absorbing material based on trisodium

trimetaphosphate-**crosslinked starch**)
IT Absorbents
(biodegradable; manuf. of absorbing material based on trisodium trimetaphosphate-**crosslinked starch**)
IT Edible oils
Paraffin oils
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising water and)
IT 7785-84-4DP, Trisodium trimetaphosphate, reaction products with maltodextrin **9005-25-8DP**, **Starch**, reaction products with trisodium trimetaphosphate, preparation 9050-36-6DP, Paselli SA 2, reaction products with trisodium trimetaphosphate 9057-06-1DP, Carboxymethyl **starch**, reaction products with trisodium trimetaphosphate
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinked**; manuf. of absorbing material based on **starch** having improved absorbent properties)
IT 26658-19-5, Span 65
RL: NUU (Other use, unclassified); USES (Uses)
(emulsifier; manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in hydrophobic liq./water emulsion system contg.)
IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising hydrophobic liq. and)
IT 110-82-7, Cyclohexane, uses 124-07-2, Octanoic acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising water and)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Aktiebolaget Pharmacia; DE 1292883 B 1969 HCAPLUS
(2) Nichiden Kagaku, K; JP 56014571 A 1981 HCAPLUS
(3) Nippon Shokubai Co; EP 0637594 A 1995 HCAPLUS
(4) Seitetsu Kagaku; EP 0083022 A 1983
(5) Unilever; GB 1508123 A 1978 HCAPLUS

L71 ANSWER 20 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1999:193942** HCAPLUS
DN **130:239100**
TI Process for modifying amylaceous materials, the products and their **applications**, especially for the manufacture of paper, **adhesives** and gels
IN Fuertes, Patrick; Lambin, Anne
PA Roquette Freres, Fr.
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA French
IC ICM C08B030-12
ICS D21H017-29; C08B031-12
CC 44-8 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 902037	A1	19990317	EP 1998-402209	19980908

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO

	FR 2768432	A1	19990319	FR 1997-11383	19970912
	FR 2768432	B1	20010406		
	CA 2247527	AA	19990312	CA 1998-2247527	19980909
	US 6469161	B1	20021022	US 1998-150680	19980910
PRAI	FR 1997-11383	A	19970912		

AB The solid phase, chem. fluidization process to produce modified **starch** comprises acid hydrolysis of the amylaceous material; the process is carried out for 6 to 28 min at 65-90.degree., preferably 6-25 min at 65 to 85.degree. and the feedstock may consist of mixts. of crude **starch**, flour, and modified **starches**, e.g., products from **etherification**, **esterification**, sulfonation, oxidn., **cationization**, hydroxylation, or acetylation of **starch**. One **cationic** product in dry powder form has a fluidity index of 70-90 in water and a fixed N content of at least 0.30% and less than 0.50%, preferably 0.30-0.48%; another **cationic** product in powder form has a fluidity index of 65-90% in water and a fixed N content of 0.04 to 0.12%, preferably 0.05-0.10%. A **cationic** product in dry powder form, obtained from wheat or **potato** **starch** has fluidity index of 65-90% and fixed N content of 0.20 to 2%, preferably 0.22 to 1%. The products may be used a sizing for paper or textiles, in **adhesive** formulations, in construction material, detergents, food, pharmaceuticals, and cosmetics. Thus, in a high speed mixing app. **starch** powder was mixed with 10% HCl soln., the mixt. was heated to 52.degree. and placed in a continuous piston-flow reactor for 3 h to complete hydrolysis; the product was removed from the reactor and neutralized with 10% Na2CO3 soln. to pH of about 6; the reactor conditions, e.g., residence time, are not suitable for a good piston-flow effect to develop.

ST **starch modification** acid hydrolysis viscosity product; fluidity index modified **starch** acid hydrolysis piston flow reactor

IT Hydrolysis
(acid; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Paper
(coated, **starch**; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Viscosity
(fluidity index; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Reactors
(plug-flow; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Fluidization
(solid-phase; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT **9005-25-8DP, Starch**, acid hydrolysis products, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT 7647-01-0, Hydrogen chloride, uses
RL: NUU (Other use, unclassified); USES (Uses)
(hydrolysis reagent; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT 497-19-8, Sodium carbonate (Na2CO3), uses
RL: NUU (Other use, unclassified); USES (Uses)
(neutralization reagent; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Hasuly; US 4421566 A 1983 HCAPLUS
(2) Hubbard; US 4373099 A 1983 HCAPLUS
(3) Hunt; US 3962079 A 1976 HCAPLUS
(4) National Starch And Chemical Corp; DE 1517085 A 1969
(5) SociEtE Des Produits Du MaIs; FR 2076829 A 1971 HCAPLUS

L71 ANSWER 21 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:708735** HCAPLUS
DN **129:317857**
TI Production and use of powdered, substituted natural polymers
IN Fischer, Wolfgang; Brossmer, Christian; Bischoff, Dietmar; Rubo, Andreas
PA Degussa Aktiengesellschaft, Germany
SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C08B037-00
ICS C08B031-12; C08B011-145; C08B037-14; C02F001-56; C02F011-00; D21H017-26; D21H017-29; D21H017-32; A61K007-00; A61K047-36
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 43
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 874000	A2	19981028	EP 1998-105941	19980401
	EP 874000	A3	19990630		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19717030	A1	19981029	DE 1997-19717030	19970423
PRAI	DE 1997-19717030		19970423		

AB In the title process, giving polymers with degree of substitution >0.32, natural polymers (e.g., **starches**, cellulose, galactomannans) are treated with epoxides of specified structure bearing tertiary amino or quaternary ammonium groups. Intense mixing of native **potato starch** (18% moisture) 10.000, activator [75:25 Ca(OH)2-SiO2] 0.246, 73.5% aq. glycidyltrimethylammonium chloride 2.087, and H2O 0.529 kg and leaving the mixt. at 50.degree. for 1 day gave a product with DS 0.179 (yield 89.4%). Repetition gave products with DS 0.353, 0.525, 0.675, and 0.816, which were used as **flocculants**.
ST amino group substitution polymer; **flocculant** polymer natural **cationic**; wastewater **flocculant** polymer **cationic** ; epoxide aminated reaction polymer; **starch** quaternary ammonium ether; quaternary ammonium ether polymer; glycidyltrimethylammonium chloride reaction **starch**
IT Wastewater treatment
(**flocculation**; powd., substituted natural polymers as **flocculants** for wastewater)
IT Polymers, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(natural, tertiary amino and quaternary ammonio ethers; prodn. and use of powd., substituted natural polymers)
IT Quaternary ammonium compounds, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(polymers; prodn. and use of powd., substituted natural polymers)
IT **Flocculants**
(prodn. of powd., substituted natural polymers as **flocculants**

)
IT Epoxides
RL: RCT (Reactant); RACT (Reactant or reagent)
(tertiary amino- and quaternary ammonium group-contg.; reaction with natural polymers)
IT 9004-34-6DP, Cellulose, tertiary amino and quaternary ammonio ethers, preparation 11078-30-1DP, Galactomannan, tertiary amino and quaternary ammonio ethers
RL: IMF (Industrial manufacture); PREP (Preparation)
(prodn. and use of powd., substituted natural polymers)
IT 56780-58-6P, 2-Hydroxy-3-(trimethylammonio)propyl **starch** chloride
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prodn. and use of powd., substituted natural polymers)
IT **9005-25-8, Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with glycidyltrimethylammonium chloride)
IT 3033-77-0, Glycidyltrimethylammonium chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with **starch**)

L71 ANSWER 22 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:599363 HCAPLUS
DN 129:218355
TI Process for producing polysaccharides and their use as absorbent materials
IN Cottrell, Ian William; Goswami, Animesh; **Chowdhary, Manjit Singh**
PA Rhodia Inc., USA
SO U.S., 9 pp., Cont. of U. S. Ser. No. 418,334, abandoned.
CODEN: USXXAM
DT Patent
LA English
IC ICM B01J020-00
ICS B01J020-22; B01J020-26; A61F013-15
NCL 502404000
CC 47-2 (Apparatus and Plant Equipment)
Section cross-reference(s): 33
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5801116	A	19980901	US 1997-880113	19970620
PRAI US 1995-418334		19950407		

AB A solid compn. of matter comprising one or more polysaccharides which has a coarse particle size is provided. The compn. demonstrates absorbent properties and is useful in absorbent articles of manuf. Also provided is a method for prepg. the compns.
ST polysaccharide absorbent manuf
IT Fibers
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(cellulosic; process for producing polysaccharides and their use as absorbent materials)
IT Polyesters, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(glycolide-based; process for producing polysaccharides and their use as absorbent materials)
IT Polyesters, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(lactide; process for producing polysaccharides and their use as absorbent materials)
IT Absorbents

Paper
Sphagnum
(process for producing polysaccharides and their use as absorbent materials)

IT Polysaccharides, uses
RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Acrylic polymers, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Carbohydrates, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Carboxylic acids, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Clays, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Diatomite
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Gelatins, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Polyamides, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Polyesters, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Polysiloxanes, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

IT Proteins, general, uses
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(soybean; process for producing polysaccharides and their use as

absorbent materials)

IT 50-21-5, Lactic acid, uses 50-21-5D, Lactic acid, salts 50-70-4, Sorbitol, uses 50-99-7, Glucose, uses 56-81-5, Glycerol, uses 56-84-8, Aspartic acid, uses 56-84-8D, Aspartic acid, salts 56-86-0, Glutamic acid, uses 56-86-0D, Glutamic acid, salts 57-48-7, Fructose, uses 57-50-1, Sucrose, uses 57-55-6, Propylene glycol, uses 58-86-6, Xylose, uses 59-23-4, Galactose, uses 63-42-3, Lactose 64-17-5, Ethanol, uses 64-18-6, Formic acid, uses 64-18-6D, Formic acid, salts, uses 64-19-7, Acetic acid, uses 64-19-7D, Acetic acid, salts, uses 65-85-0, Benzoic acid, uses 65-85-0D, Benzoic acid, salts, uses 67-56-1, Methanol, uses 69-65-8, Mannitol 69-79-4, Maltose 77-92-9, Citric acid, uses 77-92-9D, Citric acid, salts 79-14-1, Glycolic acid, uses 79-14-1D, Glycolic acid, salts 87-69-4, Tartaric acid, uses 87-69-4D, Tartaric acid, salts, uses 87-79-6, Sorbose 87-99-0, Xylitol 88-99-3, Phthalic acid, uses 88-99-3D, Phthalic acid, salts 89-05-4, 1,2,4,5-Benzene tetracarboxylic acid 89-05-4D, 1,2,4,5-Benzene tetracarboxylic acid, salts 90-80-2, Glucono-.delta.-lactone 107-21-1, Ethylene glycol, uses 110-15-6, Succinic acid, uses 110-15-6D, Succinic acid, salts 110-16-7, Maleic acid, uses 110-16-7D, Maleic acid, salts 110-17-8, Fumaric acid, uses 110-17-8D, Fumaric acid, salts 144-62-7, Oxalic acid, uses 144-62-7D, Oxalic acid, salts 499-40-1, Isomaltose 526-95-4, Gluconic acid 1344-28-1, Alumina, uses 3458-28-4, Mannose 6556-12-3, Glucuronic acid 7631-86-9, Silica, uses 9000-30-0, Guar gum 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-01-4D, Polyacrylic acid, salts 9003-01-4D, Polyacrylic acid, **starch**-grafted 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9004-35-7, Cellulose acetate 25322-68-3, Polyethylene glycol 25322-69-4, Polypropylene glycol 25513-46-6, Polyglutamic acid 25513-46-6D, Polyglutamic acid, salts 25608-40-6, Polyaspartic acid 25608-40-6D, Polyaspartic acid, salts 26063-00-3, Polyhydroxybutyrate 39421-75-5, Hydroxypropyl guar 39454-79-0, Carboxymethyl hydroxypropyl guar 39465-11-7, Hydroxyethyl guar 51198-15-3, Carboxymethyl guar 65497-29-2, Guar hydroxypropyltrimonium chloride 102190-94-3
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(process for producing polysaccharides and their use as absorbent materials)

RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; GB 1331964 1970
(2) Anon; CA 0953889 1974 HCAPLUS
(3) Anon; EP 0019371 1980 HCAPLUS
(4) Anon; EP 0260135 1987 HCAPLUS
(5) Anon; 1991
(6) Anon; EP 0476574 1991 HCAPLUS
(7) Anon; 1992
(8) Anon; EP 0481225 1992 HCAPLUS
(9) Anon; EP 0538904 1992 HCAPLUS
(10) Anon; EP 0556118 1992 HCAPLUS
(11) Anon; DE 4206850 1993 HCAPLUS
(12) Anon; DE 4206856 1993 HCAPLUS
(13) Anon; DE 4206857 1993 HCAPLUS
(14) Anon; Res Disclosure-1993 1993, V349, P296
(15) Assarsson; US 3898143 1975 HCAPLUS
(16) Chambers; US 5145906 1992 HCAPLUS
(17) Chambers; US 5597873 1997 HCAPLUS
(18) Chatterjee; US 3723413 1973 HCAPLUS
(19) Chatterjee; US 3731686 1973
(20) Comerford; US 3683917 1972 HCAPLUS
(21) Cottrell; US 5532350 1996 HCAPLUS
(22) Ducharme; US 4727824 1988
(23) Ducharme; US 4883021 1989

(24) Elias; US Re32957 1989
(25) Elliott; US 2639239 1953 HCAPLUS
(26) Elverum; US 2891050 1959 HCAPLUS
(27) Ganslaw; US 4043952 1977 HCAPLUS
(28) Gelman; US 4650716 1987 HCAPLUS
(29) Gelman; US 4689408 1987 HCAPLUS
(30) Graham; US 3005456 1961
(31) Harmon; US 3670731 1972
(32) Harper; US 3669103 1972
(33) Holst; US 3936441 1976 HCAPLUS
(34) Holst; US 4066828 1978
(35) Holst; US 4068068 1978
(36) Holst; US 4075279 1978
(37) Holst; US 4200558 1980 HCAPLUS
(38) Karami; US 4055184 1977
(39) King; US 3783872 1974
(40) Lindquist; US 3563243 1971
(41) Mamada; US 5242491 1993 HCAPLUS
(42) Marder; US 4200737 1980 HCAPLUS
(43) Masuda; US 4076663 1978
(44) Morgan; US 4605736 1986 HCAPLUS
(45) Morgan; US 4677201 1987 HCAPLUS
(46) Muller; US 4333461 1982
(47) Muller; US 4624868 1986 HCAPLUS
(48) Nankee; US 3686024 1972 HCAPLUS
(49) Obenski, B; Superabsorbent Patents Much More Than Just Diapers 1987, P24
(50) Richman; US 4454055 1984 HCAPLUS
(51) Schreiber; US 2298424 1942 HCAPLUS
(52) Shinohara; US 4200736 1980 HCAPLUS
(53) Smith; US 4069177 1978 HCAPLUS
(54) Takebe; US 4084591 1978
(55) Tanaka; US 4732930 1988 HCAPLUS
(56) Tanaka; US 5100933 1992 HCAPLUS
(57) Tanaka; US 5274018 1993 HCAPLUS
(58) Torr; US 3903889 1975
(59) Valliancourt; US 3528421 1970
(60) Wallach; US 4952550 1990 HCAPLUS
(61) Weaver; US 3935099 1976 HCAPLUS
(62) Yeh; US 4959464 1990 HCAPLUS

L71 ANSWER 23 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:429007** HCAPLUS
DN **129:71911**
TI New polysaccharide derivatives for body care
AU Cottrell, Ian W.; **Chowdhary, Manjit**; Chandran, Rama; Ghahari, Masoomeh; Koltai, Kim; Martino, Gary
CS Natinal Starch Chemical, Bridgewater, NJ, USA
SO Parfuemerie und Kosmetik (1998), 79(6), 7-10,12
CODEN: PAKOAL; ISSN: 0031-1952
PB Huethig GmbH
DT Journal; General Review
LA German
CC 62-0 (Essential Oils and **Cosmetics**)
AB A review with 11 refs. is given on performance features of amphoteric guar polysaccharides for their use in body care products including polysaccharides as conditioning agents, high functionality of amphoteric guar derivs., control of substantivity and build-up in hair care products, control of turbidness and surfactant compatibility, wet combing capability and electrostatic load, and control of dispersity.
ST body care guar polysaccharide review
IT **Cosmetics**
Cosmetics
(**cleansing creams**; new polysaccharide derivs. for

body care)
IT **Cosmetics**
(**conditioners**; new polysaccharide derivs. for body care)
IT Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(derivs.; new polysaccharide derivs. for body care)
IT Amphoteric materials
Hair preparations
(new polysaccharide derivs. for body care)
IT 9000-30-0, Guar
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(new polysaccharide derivs. for body care)

L71 ANSWER 24 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:367974** HCAPLUS
DN **129:29318**
TI **Potato** pulp: properties, physical **modification** and **applications**
AU Mayer, Frank
CS Institut fur Mikrobiologie der Georg-August-Universitat, Gottingen, D-37077, Germany
SO Polymer Degradation and Stability (1998), 59(1-3), 231-235
CODEN: PDSTDW; ISSN: 0141-3910
PB Elsevier Science Ltd.
DT Journal
LA English
CC 44-8 (Industrial Carbohydrates)
Section cross-reference(s): 38, 43
AB **Potato starch** (I) prodn. includes, as an undesired side-effect, the generation of huge amts. of a pulpy mass comprising water, cell debris, and intact I cells. Chem. analyses of the pulp revealed the presence of I, cellulose, hemicellulose, pectin, free amino acids, oligopeptides, polypeptides,and ash. Part of the pulp can be used as cattle feed, but most of it has to be considered as an agricultural waste. Besides studies on **identification** and activities of bacteria and fungi contaminating the pulp, an approach was developed for a tech. use of this waste material as an **adhesive**. The pulp is 1st autoclaved, then treated by pressure release, and finally dried into a fine-grain powder which can be stored at room temp. Tests of **applications** as the sole **adhesive**, omitting any other **adhesive**, e.g. **adhesive** based on HCHO-urea, for the prodn. of particle- and fiberboards, small containers, etc., were successful.
ST **potato starch** pulp **adhesive** fiberboard particleboard
IT **Adhesives**
Fiberboards
(**adhesives** from **potato starch** pulp for fiber- and particleboards)
IT Construction materials
(particleboards; **adhesives** from **potato starch** pulp for fiber- and particleboards)
IT **9005-25-8P**, **Starch**, preparation
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(**adhesives** from **potato starch** pulp for fiber- and particleboards)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Hillebrandt, J; Dissertation, Georg-August-Universitat 1994
(2) Kempf, W; Starch/Starke 1980, V32, P14 HCAPLUS

(3) Mayer, F; Die pfianzliche Zellwand als Vorbild fur Holzwerkstoffe Naturorientierte Herstellung von Span- und Faserplatten-Stand und Perpektiven 1993, P46
(4) Mayer, F; Patent number 195 09 633 1997
(5) Weiland, P; ACHEMA 1991 1991

L71 ANSWER 25 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:176239** HCAPLUS
DN **128:205879**
TI Modified **starch** for sizes of **glass fibers**
IN Nakajima, Toru; Watanabe, Yoshihiro
PA Nippon Starch Refining Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C03C025-02
CC 40-7 (Textiles and Fibers)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10072243	A2	19980317	JP 1996-247089	19960828
PRAI JP 1996-247089		19960828		

AB The sizes comprise 5-95% modified **starch** having viscosity of 5% aq. soln. 1-5 cP at 60.degree. and 5-95% another modified **starch** having the viscosity 6-50 cP. The modified **starch** may be hydrolyzed, etherified, esterified, grafted, and/or **crosslinked** corn, tapioca, wheat, sweet **potato**, **potato**, or high-**amylose** corn **starch**. Thus, a glass fiber yarn sized with a compn. of hydrolyzed corn **starch** (viscosity 2 cP) 2.0, another hydrolyzed corn **starch** (viscosity 10 cP) 3.0, paraffin wax 1.5, hydrogenated cottonseed oil 0.2, **cationic** lubricant 0.4, and HCHO 0.1% showed reduced powdering and fuzzing.
ST glass fiber size hydrolyzed **starch**
IT Sizes (agents)
(modified **starch** for sizing of glass fibers with reduced powdering and fuzzing)
IT Glass fibers, properties
RL: PRP (Properties)
(modified **starch** for sizing of glass fibers with reduced powdering and fuzzing)
IT **9005-25-8D**, **Starch**, modified, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(modified **starch** for sizing of glass fibers with reduced powdering and fuzzing)

L71 ANSWER 26 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:692690** HCAPLUS
DN **127:336564**
TI Surface **modification** of water-insoluble drug particles with **starch**
AU Rein, Hubert; Steffens, Klaus J.
CS Rheinische Friedrich Wilhelms Universitat, Bonn, D-53121, Germany
SO Starch/Staerke (1997), 49(9), 364-371
CODEN: STARDD; ISSN: 0038-9056
PB Wiley-VCH
DT Journal
LA English
CC 63-5 (**Pharmaceuticals**)
AB Parenterally applied, water-insol. drug particles are better tolerated if the a. particle surface is hydrophil enough, b. surface-charge (measured as .zeta.-potential) in physiol. liqs. does not exceed + 8 mV resp. -8 mV.

It is possible to coat lipophilic drug particles with a thin - hydrophilic-**amylose** film by a new, only temp.-controlled setback technique. Thus, it is not necessary to use any unphysiol. agents such as monomers or org. solvents. This process requires **starches** with low setback-temp. (TR), e.g. Schneeapfel - (TR 49.degree.), banana (plantains) - (TR 54.degree.) and chickpea **starch** (TR 55.degree.) or one of the investigated tapioca **starches** (Maizena #A6, Tr 61.degree.). **Starches** with higher setback-temp. (cave: particle growth), e.g. lentil- and plantains **starch** (TR 94.degree.) are not recommended. **Potato starches** (Sudstarke, Roquette, Emsland, Klenk) do not retrograde at lowering temp. Therefore, these **starches** are not usable for the investigated set-back-method. **Amylose** coated particles show not only optimal surface-charge, but also a reduced sedimentation-velocity, caused by an enlarged hydrodynamic-diam.

ST hydrophilic **amylose** drug surface **modification**; **starch** hydrophilic drug delivery

IT Drug delivery systems
(injections; surface **modification** of water-insol. drug particles with **starch**)

IT Hydrophilicity
Particle size
(surface **modification** of water-insol. drug particles with **starch**)

IT **9005-25-8**, **Starch**, biological studies **9005-82-7**, **Amylose**
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(surface **modification** of water-insol. drug particles with **starch**)

L71 ANSWER 27 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:542317** HCAPLUS
DN **127:210194**
TI Make-up removing compositions comprising **starch** and a surface active agent
IN Willis, Edwin
PA Unilever PLC, UK; Unilever N.V.
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K007-02
CC 62-3 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9728780	A1	19970814	WO 1997-EP203	19970115
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9714440	A1	19970828	AU 1997-14440	19970115
PRAI	GB 1996-2611		19960209		
	WO 1997-EP203		19970115		

AB A cosmetic compn. comprising a surface active agent (Markush structure given) and 5 to 40 wt.% particulate **starch** can be used to remove make-up. It has sensory properties comparable to cold creams and a foaming capacity comparable to a typical facial wash product on addn. of

water. A make-up remover contained lauric acid 1.45, myristic acid 0.65, stearic acid 0.65, oleic acid 1.70, KOH 0.91, cocoamidopropyl betaine 4.95, ethylene diaminetetracetate 0.05, sodium chloride 4.50, cholesterol 0.02, sucrose fatty acid ester 0.01, and preservatives, perfume, water q.s. 100%.

ST makeup remover **starch** surfactant

IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(anionic; make-up removing compns. comprising **starch** and surface active agent)

IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**cationic**; make-up removing compns. comprising **starch** and surface active agent)

IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(coco, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)

IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(coco, esters, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)

IT Plant (Embryophyta)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(exts.; make-up removing compns. comprising **starch** and surface active agent)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy, .alpha.-, derivs.; make-up removing compns. comprising **starch** and surface active agent)

IT Alcohols, biological studies
Fatty acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(long-chain; make-up removing compns. comprising **starch** and surface active agent)

IT Abrasives
Essential oils
Esters, biological studies
Hydrotropes
Lipids, biological studies
Perfumes
Phospholipids, biological studies
Polyoxyalkylenes, biological studies
Sunscreens
Surfactants
Vitamins
Waxes
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(make-up removing compns. comprising **starch** and surface active agent)

IT **Cosmetics**
Cosmetics
(**makeup removers**; make-up removing compns. comprising **starch** and surface active agent)

IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(nonionic; make-up removing compns. comprising **starch** and surface active agent)
IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(salts, coco, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)
IT Cassava (Manihot esculenta)
Corn
Potato (Solanum tuberosum)
Rice (Oryza sativa)
Sago palm
Sweet **potato**
Wheat
(**starch** from; make-up removing compns. comprising **starch** and surface active agent)
IT Corn
(waxy, **starch** from; make-up removing compns. comprising **starch** and surface active agent)
IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(zwitterionic; make-up removing compns. comprising **starch** and surface active agent)
IT 57-11-4, Octadecanoic acid, biological studies 57-50-1D, esters with fatty acids 107-43-7D, Betaine, cocoamidopropyl derivs. 112-80-1, Oleic acid, biological studies 143-07-7, Lauric acid, biological studies 544-63-8, Myristic acid, biological studies 9004-82-4, Sodium lauryl ether sulfate **9005-25-8**, **Starch**, biological studies 25322-68-3 25322-69-4, Polypropylene glycol 37318-31-3, Ryoto Sugar Ester S 270 194739-62-3, Tego-Betain CK
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(make-up removing compns. comprising **starch** and surface active agent)

L71 ANSWER 28 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:439232** HCAPLUS
DN **127:126541**
TI Thermoplastic **starch** and drug delivery capsules
AU Stepto, R. F. T.
CS Polymer Science and Technology Group, Manchester Materials Science Center, University of Manchester and UMIST, Manchester, M1 7HS, UK
SO Polymer International (1997), 43(2), 155-158
CODEN: PLYIEI; ISSN: 0959-8103
PB Wiley
DT Journal
LA English
CC 63-6 (**Pharmaceuticals**)
AB The thermoplastics processing of natural hydrophilic polymers in the presence of water is a recent development with very wide possible **applications**. Eventually, oil-based polymer materials could be replaced in many **applications** by inexpensive, natural products from renewable resources. As with conventional thermoplastics, hydrophilic polymer melts may be processed by injection-molding and extrusion. The present contribution focuses on the injection-molding of **potato starch**. The basis of the processing is described. In addn., the rheol. behavior of the **starch**/water melts during processing is analyzed quant. to give apparent melt viscosities. The mech. properties of molded **starch** materials

and the drug delivery behavior of **starch** capsules are discussed.
ST thermoplastic **starch** drug delivery polymer capsule
IT Drug delivery systems
(capsules; thermoplastic **starch** and drug delivery capsules)
IT Polymers, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydrophilic; thermoplastic **starch** and drug delivery capsules)
IT Molding
(injection; thermoplastic **starch** and drug delivery capsules)
IT 9002-88-4, Polyethylene **9005-25-8, Starch,** biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(thermoplastic **starch** and drug delivery capsules)

L71 ANSWER 29 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:655001** HCAPLUS
DN **125:284689**
TI Pharmaceutical **application** of **starch** isolated from Nelumbo nucifera Gaertn (Fam. Nymphaeaceae)
AU Mukherjee, Pulok K.; Giri, S. N.; Saha, Kakali; Dutta, M. S.; Pal, M.; Saha, B. P.
CS Faculty Engineering and Technology, Jadavpur University, Calcutta, 700 032, India
SO Indian Journal of Pharmaceutical Sciences (1996), 58(2), 59-66
CODEN: IJSIDW; ISSN: 0250-474X
PB Indian Pharmaceutical Association
DT Journal
LA English
CC 63-5 (**Pharmaceuticals**)
AB A study was carried out to investigate the binding and disintegrating properties of **starch** isolated from rhizomes of N. nucifera (Nelumbo **starch**) along with the dissoln. rate profiles. For this study, the tablets of paracetamol (500 mg), metronidazole (400 mg) and ibuprofen (400 mg) were prepd. using corn, Nelumbo and **potato starches,** each in batches of 200. All the products met the requirement of in vitro parameters such as uniformity of wt., assay, friability and hardness as per the pharmacopeial requirements. These products also conformed to the dissoln. **specification** of USP. The amts. of Nelumbo **starch** required as a binder and disintegrant was one-half of the amt. of corn and **potato starch.** Therefore Nelumbo **starch** can be effectively used in tablet manuf.
ST **starch** Nelumbo tablet
IT Nelumbo nucifera
Solution rate
(pharmaceutical **application** of **starch** from Nelumbo nucifera)
IT **9005-25-8, Starch,** biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(pharmaceutical **application** of **starch** from Nelumbo nucifera)
IT 103-90-2, Paracetamol 443-48-1, Metronidazole 15687-27-1, Ibuprofen
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pharmaceutical **application** of **starch** from Nelumbo nucifera)

L71 ANSWER 30 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:618680** HCAPLUS

and the drug delivery behavior of **starch** capsules are discussed.
ST thermoplastic **starch** drug delivery polymer capsule
IT Drug delivery systems
(capsules; thermoplastic **starch** and drug delivery capsules)
IT Polymers, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydrophilic; thermoplastic **starch** and drug delivery capsules)
IT Molding
(injection; thermoplastic **starch** and drug delivery capsules)
IT 9002-88-4, Polyethylene **9005-25-8, Starch**, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(thermoplastic **starch** and drug delivery capsules)

L71 ANSWER 29 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:655001** HCAPLUS
DN **125:284689**
TI Pharmaceutical **application** of **starch** isolated from Nelumbo nucifera Gaertn (Fam. Nymphaeaceae)
AU Mukherjee, Pulok K.; Giri, S. N.; Saha, Kakali; Dutta, M. S.; Pal, M.; Saha, B. P.
CS Faculty Engineering and Technology, Jadavpur University, Calcutta, 700 032, India
SO Indian Journal of Pharmaceutical Sciences (1996), 58(2), 59-66
CODEN: IJSIDW; ISSN: 0250-474X
PB Indian Pharmaceutical Association
DT Journal
LA English
CC 63-5 (**Pharmaceuticals**)
AB A study was carried out to investigate the binding and disintegrating properties of **starch** isolated from rhizomes of N. nucifera (Nelumbo **starch**) along with the dissoln. rate profiles. For this study, the tablets of paracetamol (500 mg), metronidazole (400 mg) and ibuprofen (400 mg) were prepd. using corn, Nelumbo and **potato starches**, each in batches of 200. All the products met the requirement of in vitro parameters such as uniformity of wt., assay, friability and hardness as per the pharmacopeial requirements. These products also conformed to the dissoln. **specification** of USP. The amts. of Nelumbo **starch** required as a binder and disintegrant was one-half of the amt. of corn and **potato starch**. Therefore Nelumbo **starch** can be effectively used in tablet manuf.
ST **starch** Nelumbo tablet
IT Nelumbo nucifera
Solution rate
(pharmaceutical **application** of **starch** from Nelumbo nucifera)
IT **9005-25-8, Starch**, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(pharmaceutical **application** of **starch** from Nelumbo nucifera)
IT 103-90-2, Paracetamol 443-48-1, Metronidazole 15687-27-1, Ibuprofen
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pharmaceutical **application** of **starch** from Nelumbo nucifera)

L71 ANSWER 30 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:618680** HCAPLUS

DN **125:257195**
TI Manufacture of dosage forms with modified **starch** based on its particle characteristics
IN Hirooka, Shoichi; Kamata, Sunao
PA Gunei Kagaku Kogyo Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61K047-36
ICS C08B030-00
CC 63-6 (**Pharmaceuticals**)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 08208523	A2	19960813	JP 1995-39009	19950203
PRAI JP 1995-39009		19950203		

AB Manuf. of pharmaceutical dosage forms (powders, granules, tablets) use modified flat-shaped or particular **starch** obtained by **modification** with compressing force, impact force, cutting force and/or crushing force and having sp. surface areas .gtoreq.2.5-fold greater than those of untreated **starch**. **Starch** is selected from corn **starch**, **potato starch**, rice **starch** and wheat **starch**. The prepns. showed improved hydrophilicity and enzymic degradability.
ST drug formulation **starch** particle
IT Particle size
(manuf. of dosage forms with modified **starch** based on its particle characteristics)
IT Wheat
(**starch**; manuf. of dosage forms with modified **starch** based on its particle characteristics)
IT Pharmaceutical dosage forms
(granules, manuf. of dosage forms with modified **starch** based on its particle characteristics)
IT Pharmaceutical dosage forms
(powders, manuf. of dosage forms with modified **starch** based on its particle characteristics)
IT Pharmaceutical dosage forms
(tablets, manuf. of dosage forms with modified **starch** based on its particle characteristics)
IT **9005-25-8**, **Starch**, biological studies
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(manuf. of dosage forms with modified **starch** based on its particle characteristics)

L71 ANSWER 31 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:328762** HCAPLUS
DN **125:67529**
TI An in vitro assessment of liquid-filled Capill **potato** **starch** capsules with biphasic release characteristics
AU Burns, S. J.; Corness, D.; Hay, G.; Higginbottom, S.; Whelan, I.; Attwood, D.; Barnwell, S. G.
CS Cortecs Limited, Research and Development Division, Techbase 1, Newtech Square, Deeside Industrial Park, Deeside Clywd, CH5 2NT, UK
SO International Journal of Pharmaceutics (1996), 134(1,2), 223-230
CODEN: IJPHDE; ISSN: 0378-5173
PB Elsevier
DT Journal
LA English
CC 63-6 (**Pharmaceuticals**)
AB This paper describes the first use of liq.-filled Capill **potato**

starch capsules formulated for biphasic release and reports the development of dissoln. methods suitable for assessment of drug release from this type of dosage vehicle. The liq. filling of Capill capsules was made possible by overcoming the problem of incomplete sealing of the Capill cap and body which initially resulted in leakage of liq. capsule contents. This was achieved by **modification** of the formulation to incorporate a thermosoftening agent which remained solid below 30.degree.C, but melted at 37.degree.C. The use of enteric-coated liq.-filled Capill capsules formulated for biphasic release required further development of the dissoln. method to incorporate a dissoln. medium contg. bile acids at a concn. of 14 mM to produce a similar release profile to that seen from enteric-coated hard gelatin capsules contg. the same formulation. The concn. of bile salts used is in agreement with the acceptable range previously validated for use with enteric-coated hard gelatin capsules while also remaining within the physiol. levels of bile acids found in vivo.

ST Capill **starch** capsule drug release

IT Solution rate
(in vitro assessment of liq.-filled Capill **potato** **starch** capsules with biphasic release characteristics)

IT Glycerides, biological studies
RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in vitro assessment of liq.-filled Capill **potato** **starch** capsules with biphasic release characteristics)

IT Pharmaceutical dosage forms
(capsules, sustained-release, in vitro assessment of liq.-filled Capill **potato** **starch** capsules with biphasic release characteristics)

IT **9005-25-8**, **Starch**, biological studies 148046-81-5, Gelucire 33/01
RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(in vitro assessment of liq.-filled Capill **potato** **starch** capsules with biphasic release characteristics)

L71 ANSWER 32 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1996:328742** HCAPLUS

DN **125:67528**

TI A new generation of **starch** products as excipient in pharmaceutical tablets. I. Preparation and binding properties of high surface area **potato** **starch** products

AU te Wierik, G. H. P.; Bergsma, J.; Arends-Scholte, A. W.; Boersma, T.; Eissens, A. C.; Lerk, C. F.

CS Groningen Institute for Drug Studies (GIDS), Department of Pharmaceutical Technology and Biopharmacy, University of Groningen, Ant. Deusinglaan 1, AV Groningen, 9713, Neth.

SO International Journal of Pharmaceutics (1996), 134(1,2), 27-36
CODEN: IJPHDE; ISSN: 0378-5173

PB Elsevier

DT Journal

LA English

CC 63-6 (**Pharmaceuticals**)

AB A new pharmaceutical excipient with a high binding capacity was prepd. from **potato** **starch** by enzymic degrdn., followed by suitable dehydration of the pptd. and filtered retrograded **starch** to produce high sp. surface area products. Thermal dehydration methods like drying at room or elevated temp. and spray-drying resulted in particulate solids with low sp. surface area, as measured by nitrogen adsorption, and low compactibility. Both freeze-drying and chem. **desiccation**, like washing with ethanol or acetone, produced powders with strongly increased sp. surface area and increased binding capacity. The compactibility of the final products showed a pos.

correlation with the sp. surface area, changing at high surface areas into const. compactibility. Moreover, the binding capacity appeared to increase with the moisture content of the products.

ST **starch** binding surface area tablet

IT Dehydration, chemical
Surface area
(prepn. and binding properties of high surface area **potato** **starch** products for tablets)

IT Pharmaceutical dosage forms
(tablets, prepn. and binding properties of high surface area **potato** **starch** products for tablets)

IT **9005-25-8, Starch**, biological studies
RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(prepn. and binding properties of high surface area **potato** **starch** products for tablets)

L71 ANSWER 33 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:200141** HCAPLUS
DN **124:235377**
TI **Flocculant** composition containing modified **starch**
IN Maczynski, Marian; Gzyl, Piotr; Szymanska, Grazyna; Voelkel, Ewa; Kaczmarek, Leszek; Blaschke, Zofia; Makles, Daniel
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 5 pp.
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C08L003-04
ICS B03D003-06
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 60

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 167424	B1	19950930	PL 1991-289363	19910308
PRAI	PL 1991-289363		19910308		

AB The title compn., useful esp. for treatment of wastewaters from coal or ore mining, comprises 40-95% **starch** modified with oxidn. agents or mixts. of alkali metal and/or Mg hydroxides, carbonates, chlorides, borates, and/or sulfates, and 5-60% of a linear or branched polymer as synthetic **flocculant**. The modified **starch** has increased capacity for binding H2O. Thus, 100 kg **potato** flour was suspended in 150 L H2O at 55.degree., the suspension was mixed with Na3PO4 0.5, trimetaphosphate 0.2, NaCl 1.0, Na2CO3 0.5, and NaOH 0.3 kg, the mixt. was stirred for 2 h at 50.degree., the **starch** was sepd. from the liquor by filtration, washed with H2O, resuspended in H2O, the pH adjusted to 6.5 (aq. HCl), and the product sepd. by filtration and dried. A title compn. was manufd. by dry blending 15 parts Quaker N 6116 AP (a polyacrylamide-based **flocculant**) with 85 parts of the above **starch**.

ST **starch** **modification** **flocculating** agent manuf; polyacrylamide deriv modified **starch** blend **flocculant**; phosphate salt **starch** **modification** **flocculant** manuf; trimetaphosphate **starch** **modification** **flocculant** manuf; hydroxide **starch** **modification** **flocculant** manuf

IT Wastewater treatment
(**flocculation**, from coal or ore mining, modified **starch**-synthetic polymer blends as agents for; **flocculant** compn. contg. modified **starch**)

IT **Flocculating** agents
(water-sol., modified **starch**-synthetic polymer blends;

flocculant compn. contg. modified **starch**)
IT 7722-84-1, Hydrogen peroxide, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(30% aq. soln., **potato starch** modified with; **flocculant** compn. contg. modified **starch**)
IT 175069-64-4, N 6116AP
RL: TEM (Technical or engineered material use); USES (Uses)
(modified **starch** blends; **flocculant** compn. contg. modified **starch**)
IT 497-19-8, Sodium carbonate, processes 1303-96-4, Borax 1310-73-2, Sodium hydroxide, processes 7487-88-9, Magnesium sulfate, processes 7601-54-9, Trisodium phosphate 7647-14-5, Sodium chloride, processes 13478-98-3, Hexametaphosphate 15705-55-2, Trimetaphosphate
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**potato starch** modified with; **flocculant** compn. contg. modified **starch**)
IT **9005-25-8DP, Starch**, modified
RL: IMF (Industrial manufacture); PREP (Preparation)
(with oxidn. agents or mixts. of alkali metal and/or Mg hydroxides, carbonates, chlorides, borates, and/or sulfates; **flocculant** compn. contg. modified **starch**)

L71 ANSWER 34 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1995:828566 HCAPLUS
DN 123:237910
TI Cross-linked polysaccharides used as absorbant materials
IN Cottrell, Ian William; **Chowdhary, Manjit Singh**; Goswami, Animesh
PA Rhone-Poulenc Specialty Chemicals Co., USA
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA French
IC ICM A61L015-28
ICS A61L015-60
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 33
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 668078	A2	19950823	EP 1995-400287	19950213
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	US 5532350	A	19960702	US 1994-196357	19940215
	CA 2140979	AA	19950816	CA 1995-2140979	19950124
	JP 08059891	A2	19960305	JP 1995-15091	19950201
	ZA 9501086	A	19951207	ZA 1995-1086	19950210
	AU 9512203	A1	19950824	AU 1995-12203	19950213
	BR 9500630	A	19951031	BR 1995-630	19950214
PRAI	US 1994-196357		19940215		
	US 1994-274591		19940713		

AB Absorbant materials comprise cross-linked polysaccharides. Thus, 20 g guar carboxymethyl was dissolved in 2 L of 45-50.degree. water, then 2.25 mL of a soln. of zirconium sodium lactate was added thereto and the mixt. was then dried. The absorption capacity of the powder was 48.5 g/g.
ST crosslinked polysaccharide absorbant material; guar carboxymethyl crosslinked absorbant material; zirconium sodium lactate crosslinked absorbant material
IT Diatomeae
RL: NUU (Other use, unclassified); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Acrylic polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(cross-linked polysaccharides used as absorbant materials)
IT Amino acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Anhydrides
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Carbohydrates and Sugars, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Carboxylic acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Gelatins, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Paper
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Peptides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Polyamides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Polyoxymethylenes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Proteins, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Sphagnum
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Surfactants
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT Medical goods
(absorbents, cross-linked polysaccharides used as absorbant materials)
IT Alcohols, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(carboxy, cross-linked polysaccharides used as absorbant materials)
IT Fibers
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cellulosic, cross-linked polysaccharides used as absorbant materials)
IT Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(galactomannan-contg., cross-linked polysaccharides used as absorbant materials)
IT Carboxylic acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy, cross-linked polysaccharides used as absorbant materials)
IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(lactide, cross-linked polysaccharides used as absorbant materials)
IT Protein hydrolyzates
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(soya, cross-linked polysaccharides used as absorbant materials)
IT 50-21-5, Lactic acid, uses 50-21-5D, Lactic acid, salts 56-81-5, 1,2,3-Propanetriol, uses 56-84-8, Aspartic acid, uses 56-84-8D, Aspartic acid, salts 56-86-0D, Glutamic acid, salts 57-55-6, 1,2-Propanediol, uses 64-17-5, Ethanol, uses 64-18-6, Formic acid, uses 64-18-6D, Formic acid, salts 64-19-7, Acetic acid, uses 64-19-7D, Acetic acid, salts 65-85-0, Benzoic acid, uses 65-85-0D, Benzoic acid, salts 67-56-1, Methanol, uses 77-92-9, uses 77-92-9D, salts 79-14-1, uses 79-14-1D, salts 87-69-4, uses 87-69-4D, salts 88-99-3, 1,2-Benzenedicarboxylic acid, uses 88-99-3D, 1,2-Benzenedicarboxylic acid, salts 107-21-1, 1,2-Ethanediol, uses 110-15-6, Butanedioic acid, uses 110-15-6D, Butanedioic acid, salts 110-16-7, 2-Butenedioic acid (Z)-, uses 110-16-7D, 2-Butenedioic acid (Z)-, salts 110-17-8, 2-Butenedioic acid (E)-, uses 110-17-8D, 2-Butenedioic acid (E)-, salts 121-44-8, uses 121-44-8D, salts 144-62-7, Ethanedioic acid, uses 144-62-7D, Ethanedioic acid, salts 476-73-3, Benzene1,2,3,4-tetracarboxylic acid 476-73-3D, Benzene1,2,3,4-tetracarboxylic acid, salts 1344-28-1, Alumina, uses 24991-23-9 24991-23-9D, salts 25513-46-6, Polyglutamic acid 25513-46-6D, Polyglutamic acid, salts 25608-40-6, Polyaspartic acid 26063-13-8, Polyaspartic acid 62632-70-6
RL: NUU (Other use, unclassified); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)
IT 4229-34-9, Zirconium acetate 9000-30-0, Guar 12125-02-9, Ammonium chloride, reactions 15529-67-6, Sodiumzirconiumlactate 22829-17-0, Zirconium ammonium carbonate 39454-79-0, Carboxymethyl hydroxypropyl guar 51198-15-3, Carboxymethyl guar 60676-90-6, Zirconium lactate 65497-29-2 72517-32-9 109768-37-8, Tyzor 131
RL: RCT (Reactant); RACT (Reactant or reagent)
(cross-linked polysaccharides used as absorbant materials)
IT 50-70-4, D-Glucitol, biological studies 50-99-7, Glucose, biological studies 57-48-7, Fructose, biological studies 57-50-1, Saccharose, biological studies 58-86-6, Xylose, biological studies 59-23-4, Galactose, biological studies 63-42-3, Lactose 69-65-8, D-Mannitol 69-79-4, Maltose 79-10-7D, 2-Propenoic acid, polymers with **starch**, graft 87-79-6, Sorbose 87-99-0, Xylitol 90-80-2, Gluconolactone 526-95-4, Gluconic Acid 526-95-4D, Gluconic Acid, salts 1398-61-4, Chitin 3458-28-4, Mannose 6556-12-3, Glucuronic acid 6556-12-3D, Glucuronic acid, salts 7631-86-9, Silica, biological studies 9000-01-5, Arabic gum 9000-07-1, Carragheenan 9000-36-6, Karaya gum 9000-69-5, Pectin 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-01-4D, Polyacrylic acid, salts 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-39-8, Pvp 9003-53-6, Polystyrene 9004-34-6, Cellulose, biological studies 9004-35-7, Cellulose acetate **9005-25-8**, **Starch**, biological studies 9005-32-7D, Alginic acid, compds. 9012-76-4, Chitosan 11138-66-2, Xanthan gum 13718-94-0, Isomaltulose 25322-68-3 25322-69-4 26063-00-3, Polyhydroxybutyrate 26744-04-7 68424-04-4, Polydextrose 83120-66-5
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

L71 ANSWER 35 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1994:10647** HCAPLUS
DN **120:10647**
TI Process for dry **cationization** of **starch**
IN Roerden, Dorothy L.; Wessels, Clara D.
PA Dow Chemical Co., USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C08B031-08
NCL 536050000

CC 44-6 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5241061	A	19930831	US 1992-889688	19920527
PRAI	US 1992-889688		19920527		

OS MARPAT 120:10647
AB **Cationic starches** useful for paper wet-end additives and mineral sepn. field are prepd. by the title process which used a **cationizing** agent comprising dialkyl(epoxyalkyl)amine or trialkyl(epoxyalkyl)ammonium halide in medium contg. .ltoreq.40% water in the presence of alkali metal or alk.-earth metal (hydr)oxide and a finely divided aluminosilicate clay of low **cation**-exchange capacity. Stirring a soln. of 3-chloro-2-hydroxypropyltrimethylammonium chloride with NaOH gave a 2,3-epoxypropyltrimethylammonium chloride. Adding **potato starch** to the soln. together with CaO and kaolin, and stirring gave a **cationic starch** deriv. contg. N 0.3579% at .apprx.90% yield.
ST dry **cationization starch** quaternary ammonium agent; paper wet end additive **cationic starch**
IT Alkali metal hydroxides
Alkali metal oxides
Alkaline earth hydroxides
Alkaline earth oxides
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for dry **cationization** of **starch**)
IT Pigments
(for paper, retention aids for, **cationic starch** as, manuf. of)
IT Aluminosilicates, uses
Kaolin, uses
RL: USES (Uses)
(in dry **cationization** of **starch**)
IT **Flocculating** agents
Paper
Sizes
(wet end additives for, **cationic starch** as, manuf. of)
IT Amines, uses
RL: USES (Uses)
(epoxy, dry **cationization** of **starch** by)
IT Quaternary ammonium compounds, uses
RL: USES (Uses)
(epoxy group-contg., dry **cationization** of **starch** by)
IT 1305-78-8, Calcium oxide, uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for dry **cationization** of **starch**)
IT 3327-22-8, 3-Chloro-2-hydroxypropyltrimethylammonium chloride 35649-00-4
RL: PROC (Process)
(conversion of, to epoxy compd.)
IT 3033-77-0P, 2,3-Epoxypropyltrimethylammonium chloride
RL: PREP (Preparation)
(prepn. and dry **cationization** of **starch** by)
IT **9005-25-8DP, Starch, cationic** additives, preparation 56780-58-6P
RL: PREP (Preparation)
(prepn. of, dry **cationization** process for)

L71 ANSWER 36 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1993:605768** HCAPLUS
DN **119:205768**
TI Industrial **applications** of **potato starch**

products
AU Kraak, A.
CS AVEBE Res. Dev., Foxhol, 9607 PT, Neth.
SO Industrial Crops and Products (1992), 1(2-4), 107-12
CODEN: ICRDEW; ISSN: 0926-6690
DT Journal; General Review
LA English
CC 44-0 (Industrial Carbohydrates)
Section cross-reference(s): 17, 51, 61
AB A review with 8 refs. on the 4 main areas for the industrial **applications** of **potato starch**, i.e., **adhesives**, paper, food, and textiles, is presented. Also, there are a no. of other fields where **starch** products have a special role, including fluid loss control during deep-well drilling for petroleum and natural gas and **flocculation** in the purifn. process for drinking water.
ST review **starch adhesive** food papermaking; textile processing aid **starch** review; **flocculation** well drilling **starch** review
IT Drilling fluids and muds
(fluid loss control agents for, **potato starch** for)
IT Paper
(manuf. of, **potato starch applications** in)
IT **Adhesives**
(**potato starch applications** in)
IT Food
(**potato starch applications** in industry of)
IT Textiles
(processing aids for, **potato starch** as)
IT Water **purification**
(**flocculation, potato starch applications** in)
IT **9005-25-8, Starch**, uses
RL: USES (Uses)
(**potato**, industrial **applications** of)

L71 ANSWER 37 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1993:430036** HCAPLUS
DN **119:30036**
TI Manufacture of a dry **starch** ether thickener
IN Twardowski, Jerzy; Machowski, Stanislaw; Jakobczyk, Piotr; Adolf, Eugeniusz; Swierczynski, Waclaw; Szczerbinski, Jerzy
PA Spoldzielnia Pracy Chemikow "Xenon", Pol.
SO Pol., 2 pp.
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C08B031-08
ICA C09D011-02
CC 42-5 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38, 44, 46, 58
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 154610	B1	19910830	PL 1987-269967	19871231
PRAI	PL 1987-269967		19871231		

AB A thickener for paints, inks, **adhesives**, laundry powders, and foam concrete is manufd. by **etherification** of **starch** for 2.5-3 h at 288-293K and 10-20 min at 358-373K using a soln. contg. polyols, 45-60% aliph. alcs., 12-15% alkali-metal hydroxides, and 0.5-5% surfactant in the presence of .ltoreq.14 parts alkali-metal

chloroacetates/100 parts **starch**. Thus, 200 kg **potato** **starch** was mixed 2.5 h with 0.06 m3 soln. contg. 0.0092 m3 diethylene glycol, 0.0113 m3 aq. NaOH (d. 1489 kg/m3), 0.0395 m3 MeOH, 0.2 kg surfactant, 1.6 kg Na o-phenylphenoxide bactericide, and 20 kg Na chloroacetate at 290K, and the reaction mixt. was dried with 380-395K air and heated 15 min at 360K to give a light colored product with viscosity 15-20 Pa s.

ST ether **starch** thickener; **adhesive** thickener **starch** ether; foam concrete thickener **starch** ether; laundry powder thickener **starch** ether; ink thickener **starch** ether; paint thickener **starch** ether; **etherification starch** chloroacetate; methanol **etherification starch**; diethylene glycol **etherification starch**

IT **Etherification**
(of **starch**)

IT Thickening agents
(**starch** ethers, manuf. of)

IT **Adhesives**
Detergents
Inks
(thickeners for, dry **starch** ethers as)

IT Concrete
(aerated, thickeners for, dry **starch** ethers as)

IT Coating materials
(paints, thickeners for, dry **starch** ethers as)

IT 67-56-1, Methanol, uses 111-46-6, Diethylene glycol, uses 1310-73-2, Sodium hydroxide, uses 3926-62-3, Sodium chloroacetate
RL: USES (Uses)
(in **etherification** of **starch** for thickeners)

IT **9005-25-8DP, Starch**, ethers
RL: PREP (Preparation)
(manuf. of dry, for thickeners)

L71 ANSWER 38 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1993:21261** HCAPLUS
DN **118:21261**
TI **Location** of **amylose** in normal **starch** **granules**. I. Susceptibility of **amylose** and **amylopectin** to **cross-linking** reagents
AU Jane, J.; Xu, A.; Radosavljevic, M.; Seib, P. A.
CS Dep. Food Sci. Hum. Nutr., Iowa State Univ., Ames, IA, 50011, USA
SO Cereal Chemistry (1992), 69(4), 405-9
CODEN: CECHAF; ISSN: 0009-0352
DT Journal
LA English
CC 17-6 (Food and Feed Chemistry)
AB When granular **starch** was **crosslinked**, more **amylopectin** than **amylose** mols. were found **crosslinked**. For example, when corn **starch** was treated with **crosslinking** reagent (0.07% epichlorohydrin) (pH 10.5 for 24 h), 91% of its **amylopectin** and 45% of its **amylose** became insol. **Crosslinking** of pregelatinized and dispersed **starch** caused less difference in the proportion of sol. **amylose** and **amylopectin** than did the **crosslinking** of native granular **starch**. After the **starch** had been **crosslinked** in the granular form, gel-permeation chromatograms showed no increase in the size of **amylose** as a result of **crosslinking** between two or more **amylose** mols. However, susceptibility of the **amylose** to sequential hydrolysis by isoamylase and .beta.-amylase decreased. The relative blue values of **amylopectin** peaks indicated that **amylose** was **crosslinked** to **amylopectin**. This

was confirmed when the **amylopectin** isolated from **crosslinked starches** was debranched with isoamylase. These results are consistent with the view that **amylose** is interspersed among **amylopectin** mols. in corn and **potato** **starch** granules.

ST **starch amylose amylopectin** **crosslinking** agent

IT **9005-25-8, Starch**, biological studies
RL: BIOL (Biological study)
(**amylose location** in, of corn and **potato**, **amylose** and **amylopectin crosslinking** by epichlorohydrin and adipic anhydride in study of)

IT 106-89-8, Epichlorohydrin, biological studies 2035-75-8, Adipic anhydride
RL: BIOL (Biological study)
(**starch crosslinking** by, **amylose** **location** in **starch** granule in relation to)

L71 ANSWER 39 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1992:8164 HCAPLUS
DN 116:8164
TI **Adhesives** for the manufacture of **corrugated** boards, a dry mixture and combination of components
IN Jansen, Johannes Jacobus; Potze, Hendrik Jans
PA AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.
SO Eur. Pat. Appl., 5 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C09J103-02
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 38, 43
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 450729	A2	19911009	EP 1991-200777	19910403
	EP 450729	A3	19920304		
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL				
	NL 9000791	A	19911101	NL 1990-791	19900404
PRAI	NL 1990-791		19900404		

AB The title **adhesives** comprise water, suspended ungelatinized **starch** granules, a carrier which contains a gelatinized **crosslinked starch** and a gelatinized non-**crosslinked starch** product, and other customary additives. The **adhesives** have good rheol., water retention, processing and adhesion properties. A typical **adhesive** comprised water 275, pregelatinized **potato starch** 5, epichlorohydrin-**crosslinked** corn **starch** 5, Borax 3, NaOH 1, and native **potato starch** 84 parts.

ST corrugated board **adhesive starch** carrier; **crosslinked starch** carrier **adhesive**

IT **Adhesives**
(for corrugated boards, **starch**-based, contg. **crosslinked** carrier for improving processability and adhesion)

IT Building materials
(corrugated boards, **adhesives** for manufg., **starch**-based, contg. **crosslinked** carrier for good processability)

IT **9005-25-8, Starch**, miscellaneous
RL: USES (Uses)
(**adhesives** from, for corrugated boards, **crosslinked** and non-**crosslinked** carrier in prepn. of)

IT 137878-56-9

RL: USES (Uses)
(carrier, with non-**crosslinked** carrier, for **adhesives** in corrugated board manuf.)

L71 ANSWER 40 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1991:509395** HCAPLUS
DN **115:109395**
TI Preparation of **crosslinked starch gel granules** for affinity **purification** of .alpha.-amylase
IN Somers, W. A. C.; Rozie, H. J.; Van't Riet, K.; Rombouts, F. M.; Visser, J.
PA Rijkslandbouwuniversiteit Wageningen, Neth.
SO Neth. Appl., 30 pp.
CODEN: NAXXAN
DT Patent
LA Dutch
IC ICM B01J020-30
ICS B01D015-08; C12N009-26
CC 7-2 (Enzymes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI NL 8901576	A	19910116	NL 1989-1576	19890622
PRAI NL 1989-1576		19890622		

AB An adsorbent for .alpha.-amylase is prepd. from **crosslinked starch** gel by grinding to a powder and/or enzymic activation with .alpha.-amylase, followed by granulation with a gelling agent (e.g. aq. alginate soln.) and a salt soln. (e.g. aq. Ca salt soln.). Thus, 25 g drum-dried **potato starch** powder was **crosslinked** by shaking with EtOH 153, distd. water 30.9, epichlorohydrin 12.6, and 5M NaOH 30.85 mL at 45.degree. for 4 h. The reaction was stopped with 200 mL 7% AcOH and the product was filtered, dried, and ground. A 0.5 wt./vol. soln. of Na alginate in distd. water was mixed with 5-30% of the **starch** powder and added dropwise to 0.5M CaCl2 soln. to produce granules which were dried at 90.degree. for 24 h. Maxamyl (heat-stable .alpha.-amylase from Bacillus licheniformis) was purified 5-fold by adsorption on and desorption from these **starch** granules.
ST amylase affinity purifn **starch**
IT Adsorbents
(**crosslinked starch** gel granules, for affinity purifn. of .alpha.-amylase)
IT **Crosslinking**
(of **starch**, in **starch** gel granule prepn. for .alpha.-amylase purifn. by affinity absorption)
IT **9005-25-8, Starch**, uses and miscellaneous
RL: USES (Uses)
(**crosslinked** gel granules of, as adsorbent for .alpha.-amylase affinity purifn.)
IT 106-89-8, Epichlorohydrin, biological studies 7440-70-2, Calcium, biological studies 9005-32-7, Alginic acid 9005-38-3, Sodium alginate 10043-52-4, Calcium chloride, biological studies
RL: BIOL (Biological study)
(in **crosslinked starch** gel granules prepn., for .alpha.-amylase purifn. by affinity absorption)
IT 9000-90-2P, .alpha.-Amylase
RL: PUR (Purification or recovery); PREP (Preparation)
(purifn. of, by affinity absorption on **crosslinked starch** gel granules)

L71 ANSWER 41 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1991:124848 HCAPLUS
DN 114:124848

TI Non-carrier **starch** as **adhesive** for **corrugated** boards
IN Higashida, Koichi; Yasui, Toshikazu
PA Sanwa Denpun Kogyo K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09J103-00
ICA B32B003-28
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 43
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02281090	A2	19901116	JP 1989-103015	19890421
PRAI JP 1989-103015		19890421		

AB The title **adhesives**, useful in high-speed operations, contain 3-9 parts high-viscosity **starch** (**potato**-based, etherified, esterified, **crosslinked**, or grafted) and 7-1 parts low-viscosity **starch** (corn-, wheat- or tapioca-based) mixed with H2O to Ford cup viscosity (VF) 20-50 s. An **adhesive** with VF 38 s and good bonding strength was prepd. by dispersing 500 kg 7:3 mixt. of **potato starch** and **cornstarch** in 900 L water at 43.degree., adding slowly 642.5 kg 2.6% NaOH, and adding 5.85 kg H3BO3.
ST **starch adhesive** corrugated paperboard; corn **starch adhesive** paperboard; tapioca **starch adhesive** paperboard; **potato starch adhesive** paperboard; wheat **starch adhesive** paperboard
IT **Adhesives**
(**starches**, ungelatinized, for high-speed manuf. of corrugated paperboard)
IT Paperboard
(corrugated, **adhesives** for manuf. of, ungelatinized **starch** compns. as)
IT **9005-25-8**, **Starch**, uses and miscellaneous
9005-25-8D, **Starch**, grafted
RL: USES (Uses)
(**adhesives**, ungelatinized, for high-speed manuf. of corrugated paperboard)

L71 ANSWER 42 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1991:84202** HCAPLUS
DN **114:84202**
TI Method for manufacturing a modified **starch adhesive**
IN Mezynski, Leonard; Urbaniak, Grzegorz; Strozycka, Hanna
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 8 pp. Abstracted and indexed from the unexamined application
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C09J003-06
ICS C08B031-06
CC 44-6 (Industrial Carbohydrates)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI PL 149441	B1	19900228	PL 1987-268185	19871012
PRAI PL 1987-268185		19871012		

AB A modified **starch adhesive** is prepd. by **esterification** of **starch** in the presence of urea. **Starch** 100 wt. parts is wetted (to a moisture content of

.ltoreq.40%) by using an aq. soln contg. 85% H3PO4 1.5-5.0, NaH2PO4 or KH2PO4 2-7, and urea 6-12 wt. parts. The mixt. is dried to contain <20% H2O, thermally treated at 120-150.degree. to obtain a product which is sol. in cold water, and mixed with alk. salts at an alk. salt/ **starch** ester wt. ratio of 2-15:100. Thus, **potato** flour 500 kg was sprayed with 200 L soln. contg. urea 50 kg, NaH2PO4.H2O 20 kg, and 85% H3PO4 10 L. After drying with air at 165.degree., **starch** contg. 18% moisture was heated .apprx.1 h at 135.degree., cooled, and wetted with an aq. soln. contg. Na phenylphenolate and Na metasilicate to attain moisture content of 12%. The resulting product was dissolved in cold water to form a 10% **adhesive** paste having pH 7.8 and viscosity 1500 mPa-s.

ST **starch** ester **adhesive**; phosphorylation **starch** **adhesive**

IT Phosphorylation, synthetic
(of **starch** in presence of urea, for prepn. of **adhesive** pastes)

IT **Adhesives**
(pastes, modified **starch** compns. as, prepn. of)

IT **9005-25-8, Starch,** reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorylation of, in presence of urea)

IT 127149-16-0P
RL: PREP (Preparation)
(prepn. of, as **adhesive** paste)

IT 1322-21-0, Sodium phenylphenolate 6834-92-0, Sodium metasilicate
RL: USES (Uses)
(water content controlled by, in modified **starch** **adhesive** pastes)

L71 ANSWER 43 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1990:461597 HCAPLUS
DN 113:61597
TI **Adhesive** compositions for **corrugated** board manufacture
IN Hishikawa, Yasutoshi; Inada, Kazuyuki; Norizuki, Ikuro
PA Matsutani Kagaku Kogyo Kaisha, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09J103-08
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02041384	A2	19900209	JP 1988-192460	19880801
JP 06023355	B4	19940330		
PRAI JP 1988-192460		19880801		

AB The title compns. forming **adhesive** solns. with water at room temp., suitable for high-speed corrugating machines, contain ungelatinized **starch** powder and **crosslinked** etherated .alpha.-**starch**. Thus, 100 kg **potato** **starch** was dispersed in Na2SO4.10H2O in 120 L water, treated dropwise with a soln. of 1 kg NaOH in 25 L water), treated with 5 g propylene oxide and 5 g epichlorohydrin at 40-50.degree. for 20 h, neutralized with 0.4, H2SO4, washed, dewatered, slurried to a 40% **starch** content, gelatinized in a drum dryer, dried, and pulverized to give **crosslinked** hydroxypropyl .alpha.-**starch** having a degree of substitution 0.01 and swelling (2 g in 198 g water, 30 min) 70 mL. This product 3.5, tapioca **starch** powder 43.5, borax 1, and Na2CO3 2 kg were mixed to give a compn. giving JIS Z 0402 **adhesive** strength 25.2 kg.

ST **starch** **adhesive** corrugated board

IT **Adhesives**

(**starch**, contg. **crosslinked** etherated **starch**, for corrugated boards)
IT Paperboard
(corrugated, manuf. of, **adhesives** for)
IT **9005-25-8**, **Starch**, uses and miscellaneous
RL: USES (Uses)
(**adhesives**, contg. **crosslinked** etherated **starch**, for corrugated board manuf.)
IT 68412-87-3 72316-65-5, **Carboxymethylstarch** sodium salt-epichlorohydrin copolymer 128465-87-2
RL: USES (Uses)
(**starch adhesives** contg., for corrugated board manuf.)

L71 ANSWER 44 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1990:101063** HCAPLUS
DN **112:101063**
TI Manufacture of modified **starch**
IN Mezynski, Leonard; Urbaniak, Grzegorz
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 8 pp. Abstracted and indexed from the unexamined application.
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C08B030-00
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 40, 43
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI PL 144543	B1	19880630	PL 1985-254340	19850702
PRAI PL 1985-254340		19850702		

AB **Starch** is impregnated (100 parts) with 1-10 parts alkali metal or ammonium sulfate or hydrogen sulfate and 3-13 parts urea, and the mixt. is held 0.5-2 h at 20-60.degree., dried to moisture content <20.degree., heated 0.5-2 h at 110-140.degree., cooled, and wetted with water. The product is suitable for manuf. of fibers and paper. Thus, 100 kg **potato starch** was mixed 1 h with 30 L soln. contg. NaHSO4 3, urea 8, and MgSO4 1 kg at 20.degree., and the product was dried to a moisture content of 18% at 60.degree., heated 2 h at pH 2 and 110.degree., cooled, and wetted to moisture content 14%. The product was insol. in cold water. A 20% aq. **adhesive** soln. contg. this product had a viscosity of 135 and 150 mPa-s before and after 5 h at 50.degree., resp.
ST **starch** modified prepn; fiber manuf modified **starch**; paper manuf modified **starch**; sulfate modified **starch**; urea modified **starch**; **adhesive** modified **starch**
IT Sizes
(for paper, modified **starch** as, prepn. of)
IT Paper
(manuf. of, modified **starch** for, prepn. of)
IT Synthetic fibers, polymeric
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, modified **starch** solns. for)
IT **Adhesives**
(modified **starch** solns. as, prepn. of)
IT **9005-25-8DP**, **Starch**, modified
RL: PREP (Preparation)
(prepn. of, for manuf. of fibers and paper)
IT **9005-25-8**
RL: USES (Uses)
(sizes, for paper, modified **starch** as, prepn. of)
IT 57-13-6, Urea, uses and miscellaneous 7487-88-9, Magnesium sulfate, uses

and miscellaneous 7681-38-1, Sodium bisulfate 7757-82-6, Disodium sulfate, uses and miscellaneous
RL: USES (Uses)
(**starch modification** by, for manuf. of fibers and paper)

L71 ANSWER 45 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1990:101062** HCAPLUS
DN **112:101062**
TI Preparation of **starch**-based **adhesive**
IN Mezynski, Leonard; Slawski, Michal
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 8 pp.
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C09J003-06
ICS C08B031-18
CC 44-6 (Industrial Carbohydrates)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI PL 144862	B1	19880730	PL 1986-258558	19860321
PRAI PL 1986-258558		19860321		

AB An aq. **starch** suspension is oxidized by using NaClO (contg. 3-5.5% active Cl) at .ltoreq.35.degree. by decreasing pH from .apprx.11 to .apprx.4.5. The resulting 25% aq. oxidized **starch** soln. (viscosity 10-70 mPa-s at 75.degree.) is addnl. esterified, and the resulting depolymd. **starch** is dewatered, washed, and dried to the moisture content .ltoreq.20%. Then, 8-20% urea and(or) NaNO3 (anhyd. **starch** basis) is added, and the mixt. is homogenized. The product is suitable for bonding of fibers, and manuf. of sandpapers and **adhesive** tapes. Thus, 100 kg **potato starch** and NaClO (contg. 4.0 kg active Cl) were added to 120 L water, and the pH was decreased from 11.5 to 5 at 30.degree.. Then, **esterification** was done at pH 8-9.5 by using 4 L Ac2O and NaOH. Then, **starch** was dehydrated and dried to moisture content 18%. The resulting **starch** (viscosity 45 mPa-s at 75.degree.) was mixed with 10 kg NaNO3 and 5 kg urea and homogenized. The product was sol. in cold water and formed glossy coatings.

ST **starch** oxidized esterified **adhesive**; urea modified **starch adhesive**; sodium nitrate modified **starch adhesive**

IT **Adhesive** tapes
(**adhesives** for, oxidized **starch** esters for)

IT Fibers
Synthetic fibers
Synthetic fibers, polymeric
RL: USES (Uses)
(binders for, esterified oxidized **starch** for)

IT **Adhesives**
(esterified oxidized **starch** suspensions, contg. urea and sodium nitrate for)

IT Binding materials
(esterified oxidized **starch**, for fibers)

IT Sandpaper
(manuf. of, esterified oxidized **starch** for)

IT 108-24-7, Acetic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(**esterification** by, of oxidized **starch**)

IT 57-13-6, Urea, uses and miscellaneous 7631-99-4, Sodium nitrate, uses and miscellaneous
RL: USES (Uses)

(esterified oxidized **starch** esters contg., for **adhesives** and binders)
IT **9005-25-8DP, Starch**, oxidized, esterified
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, for **adhesives** and binders)

L71 ANSWER 46 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1989:601330** HCAPLUS
DN **111:201330**
TI Biocidal organic **flocculating** agent
IN Halamek, Bohumir; Kodet, Josef
PA Czech.
SO Czech., 6 pp.
CODEN: CZXXA9
DT Patent
LA Czech
IC ICM C02F001-50
CC 61-5 (Water)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CS 259109	B1	19881014	CS 1986-7306	19861010
PRAI CS 1986-7306		19861010		

AB **Potato starch** is suspended in an aq. soln. of CuCl2 (or CuSO4) and AgNO3 and the mixt. is evapd. on heated drums at 100-150.degree.. The agent replaces conventional **flocculants** in the **clarification** of drinking water and has algicidal and bactericidal properties. It is used at 5 mg/L-treated water, where the Cu and Ag concns. are adjusted so that the final concns. in the treated water do not exceed acceptable limits.
ST **flocculant** algicide bactericide water; **potato starch flocculant** water
IT Algicides
Bactericides, Disinfectants, and Antiseptics
(**flocculants**, for water)
IT Water **purification**
(**flocculation**, agents for, algicidal-bactericidal, contg. **potato starch** and copper and silver)
IT 7761-88-8, Silver nitrate, uses and miscellaneous
RL: USES (Uses)
(algicidal-bactericidal **flocculant** contg. **potato starch** and copper and, for water)
IT 7447-39-4, Copper chloride, uses and miscellaneous 7758-98-7, Copper sulfate, uses and miscellaneous
RL: USES (Uses)
(algicidal-bactericidal **flocculant** contg. **potato starch** and silver and, for water)
IT **9005-25-8, Starch**, uses and miscellaneous
RL: USES (Uses)
(**potato**, algicidal-bactericidal **flocculant** contg. copper and silver and, for water)

L71 ANSWER 47 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1989:480262 HCAPLUS
DN 111:80262
TI Dry carbohydrate **granules** or platelets for **adhesives**
IN Wegner, Juergen; Dierichs, Wolfgang; Haller, Werner; Jansen, Johannes Jacobus; Capelle, Anthony; Kamminga, Willem; Guns, Jacobus
PA Henkel K.-G.a.A., Fed. Rep. Ger.; AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten
SO Ger. Offen., 10 pp.
CODEN: GWXXBX
DT Patent

LA German
IC ICM C08L003-08
ICS C08L001-26; C08J003-12; C09J003-02
ICA C09J003-04; C09J003-06; C09J003-14; B01J002-24; B01J002-26
CC 44-8 (Industrial Carbohydrates)
Section cross-reference(s): 43
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3734491	A1	19890420	DE 1987-3734491	19871012
	EP 311873	A2	19890419	EP 1988-116397	19881004
	EP 311873	A3	19900228		
	EP 311873	B1	19930818		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 93257	E	19930915	AT 1988-116397	19881004
	ES 2042681	T3	19931216	ES 1988-116397	19881004
	DD 283146	A5	19901003	DD 1988-320601	19881010
	AU 8823632	A1	19890413	AU 1988-23632	19881011
	AU 613410	B2	19910801		
	DK 8805669	A	19890413	DK 1988-5669	19881011
	FI 8804665	A	19890413	FI 1988-4665	19881011
	NO 8804524	A	19890413	NO 1988-4524	19881011
	ZA 8807578	A	19890628	ZA 1988-7578	19881011
	JP 01221473	A2	19890904	JP 1988-253960	19881011
	CA 1334547	A1	19950221	CA 1988-580124	19881012
	US 5087649	A	19920211	US 1990-625771	19901207
PRAI	DE 1987-3734491		19871012		
	EP 1988-116397		19881004		
	US 1988-254508		19881006		

AB The title compns., resistant to agglomeration, dust formation, and demixing, are prepd. by drying thin layers of 30-80% aq. mixts. of carboxymethylated or alkoxylated **starches** 30-95, cellulose ethers 3-40, and H2O-dispersible polymers 2-40% at 80-200.degree.. Adding 4.5 g epichlorohydrin to a slurry of 18 kg **potato starch** (19% H2O) and 25 kg H2O at pH 11, heating 16 h at 30.degree., adding 3.3 kg ClCH2CO2Na and 2.5 kg 50% NaOH, and heating for 30 s (outlet temp. 95.degree.) gave a **crosslinked** carboxymethyl **starch**. Adding 9.69 kg 50% poly(vinyl acetate) dispersion and 6.65 kg lightly ethoxylated Me cellulose, casting the slurry on a rotating drum heated at 120.degree. (residence time 15 s), and grinding the dry product gave a wallpaper **adhesive**.

ST **adhesive** dry carbohydrate deriv; wallpaper **adhesive** dry mix; carboxymethyl **starch adhesive** dry; cellulose ether **adhesive** dry; hydroxyethyl methyl cellulose **adhesive**; epichlorohydrin **crosslinker** CM **starch**

IT **Adhesives**
(carboxymethyl **starch**-cellulose ether-water-sol. polymer blends, dry and water-dispersible)

IT 79-10-7D, Acrylic acid, esters, copolymers 9002-89-5 9003-20-7, Poly(vinyl acetate) 24937-78-8, EVA
RL: USES (Uses)
(**adhesives**, contg. carboxymethyl **starch** and cellulose ethers, dry and water-dispersible)

IT 9004-32-4, Sodium carboxymethyl cellulose 9004-65-3, 2-Hydroxypropylmethyl cellulose 9004-67-5, Methyl cellulose 9032-42-2, 2-Hydroxyethylmethyl cellulose 9049-76-7, 2-Hydroxypropyl **starch**
RL: USES (Uses)
(**adhesives**, contg. carboxymethyl **starch** and water-sol. polymers, dry and water-dispersible)

IT 9063-38-1, Sodium carboxymethyl **starch**
RL: USES (Uses)
(**adhesives**, contg. cellulose ethers and water-sol. polymers, dry and water-dispersible)

IT 106-89-8, Epichlorohydrin, uses and miscellaneous
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents, for carboxymethyl **starch**)
IT **9005-25-8, Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with epichlorohydrin and sodium chloroacetate)
IT 3926-62-3, Sodium chloroacetate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch** and epichlorohydrin)

L71 ANSWER 48 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1989:445047** HCAPLUS
DN **111:45047**
TI Liquid body powder containing **potato starch** useful for delivering active ingredients, improving smoothness of skin, preventing irritation, and absorbing perspiration
IN Fields, Garry D.
PA USA
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K007-035
ICS A61K031-715; A61K047-00
CC 62-4 (Essential Oils and **Cosmetics**)
Section cross-reference(s): **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8707139	A1	19871203	WO 1987-US1288	19870529
	W: AU, DK, JP, KR				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	AU 8775149	A1	19871222	AU 1987-75149	19870529
	EP 270632	A1	19880615	EP 1987-903964	19870529
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 01501147	T2	19890420	JP 1987-503555	19870529
PRAI	US 1986-868543		19860530		
	US 1986-916735		19861008		
	WO 1987-US1288		19870529		

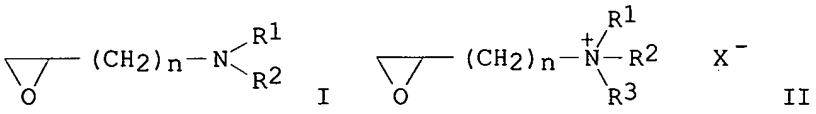
AB The title liq. powder comprises **potato starch**, veegum, cetyl alc., stearic acid, glycerin, PEG-8 oleate, water, and, optionally, an active ingredient and/or a fragrance. A liq. powder compn. contained veegum 8, glycerin 8, stearic acid 4, cetyl alc. 7.2, PEG-8 oleate 3.2, fragrance 0.4, **potato starch** 203.6, and water to 800 lb. To this compn. was added 8 lb Emercide 1199 or Wickenol 340 or Germeben II; all 3 bactericides were effective when tested. Germeben II gave the best results due to its high compatibility with the lotion and the fact it has a broad spectrum of preservative characteristics.
ST body powder liq pharmaceutical carrier; antiperspirant liq body powder; antiirritant liq body powder
IT Analgesics
Anti-infective agents
Antiemetics
Antihistaminics
Antiperspirants
Bactericides, Disinfectants, and Antiseptics
Herb
Inflammation inhibitors
(carriers for, liq. body powder as)
IT Pharmaceutical dosage forms
(carriers for, liq. body powder as, for topical and mucous membrane **application**)
IT **Wound healing**

(enhancement of, agents for, liq. body powders as carriers for)
IT Plant
(exts., liq. body powders as carriers for)
IT Smectite-group minerals
RL: BIOL (Biological study)
(liq. body powder contg., for cosmetic and pharmaceutical use)
IT **Pruritus**
(treatment of, agents for, liq. body powder as carriers for)
IT **Cosmetics**
(body **powders**, liq., **starch** and veegum in)
IT Fungicides and Fungistats
(medical, carriers for, liq. body powder as)
IT 61848-87-1, Wickenol 340 117803-48-2, Emercide 1199 121685-54-9, Germeben II
RL: BIOL (Biological study)
(liq. body powder contg.)
IT 56-81-5, 1,2,3-Propanetriol, biological studies 57-11-4, Octadecanoic acid, biological studies 9004-96-0 **9005-25-8**, **Starch**, biological studies 36653-82-4, Cetyl alcohol
RL: BIOL (Biological study)
(liq. body powder contg., for cosmetic and pharmaceutical use)

L71 ANSWER 49 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1988:23616** HCAPLUS
DN **108:23616**
TI Process for dry **cationization** of **starch**
IN Stober, Reinhard; Fischer, Wolfgang; Huss, Michael; Udluft, Klaus
PA Degussa A.-G., Fed. Rep. Ger.
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C08B031-12
ICA C02F001-56; C01F011-46; D21H003-48
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 43, 61
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3604796	A1	19870820	DE 1986-3604796	19860215
	DE 3604796	C2	19871112		
	EP 233336	A2	19870826	EP 1986-116805	19861203
	EP 233336	A3	19880504		
	EP 233336	B1	19931103		
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	AT 96808	E	19931115	AT 1986-116805	19861203
	ES 2044833	T3	19940116	ES 1986-116805	19861203
	BR 8606473	A	19871020	BR 1986-6473	19861229
	US 4785087	A	19881115	US 1986-947458	19861229
	FI 8700250	A	19870816	FI 1987-250	19870121
	FI 82839	B	19910115		
	FI 82839	C	19910425		
	ZA 8700716	A	19870930	ZA 1987-716	19870130
	JP 62192401	A2	19870824	JP 1987-20615	19870202
	JP 05047562	B4	19930719		
	AU 8768793	A1	19870820	AU 1987-68793	19870213
	AU 593325	B2	19900208		
	CA 1292979	A1	19911210	CA 1987-529638	19870213
	US 4812257	A	19890314	US 1987-113970	19871029
	CN 1043505	A	19900704	CN 1988-108589	19881215
PRAI	DE 1986-3604796		19860215		
	EP 1986-116805		19861203		
	US 1986-947458		19861229		

GI



AB The dry **cationization** of **starch** is accomplished by reacting **starch** with I (R1 = C1-4 alkyl, Bz; R2 = C1-4 alkyl; n = 1-3) or II (R3 = C1-4 alkyl; X = Cl, Br, AcO, sulfate) in alk. medium in the presence of H2O at 5-40.degree. and in the presence of finely divided silicic acid. These **cationized starches** are useful as retention agents, for improving paper strength, as additives to pulp or to the sizing press, as thickeners, as **flocculation** agents in water treatment, and in the manuf. of gypsum. Thus, 50 g of **potato starch** (H2O content 19.5%, insol. N content 0.008%), was added to a mixer, 6.44 kg Activator PC-2 [Ca(OH)2 66%, silicic acid 34%] was added, mixed for 5 min, over 5 min 5.137 kg of a reagent soln. contg. 1.054 kg II (R1-R3 = Me, X = Cl, n = 1) was added, mixed for a further 10 min, then stored for 24 h at 20.degree., producing 92.8% yield of **cationic starch** ethers having substitution degree 0.026, and viscosity of a 3% **starch** paste 1480 mPa-s (Brookfield viscometer at 20.degree. and 100 rpm).

ST dry **cationization starch** process; **cationic starch** manuf paper size; water purifn **cationic starch** manuf; **flocculant cationic starch** water purifn; gypsum manuf **cationic starch**; thickening agent **cationic starch** manuf; retention agent **cationic starch** manuf; epoxypropyltrimethylammonium chloride reaction product **starch**

IT Water **purification**
(auxiliaries for, **cationic starch** ethers as, manuf. of)

IT **Flocculating** agents
Sizes
Thickening agents
(**cationic starch** ethers as, manuf. of)

IT Paper
(sizes for, **cationic starch** ethers as, manuf. of)

IT Amines, compounds
RL: USES (Uses)
(tertiary, epoxy, reaction products, with **starch**, **cationic starch** ether manuf. from)

IT Quaternary ammonium compounds, compounds
RL: USES (Uses)
(tri-C1-4-alkyl(epoxyalkyl), reaction products, with **starch**, **cationic starch** ether manuf. from)

IT 3033-77-0DP, 2,3-Epoxypropyltrimethylammonium chloride, reaction products with **starch 9005-25-8DP**, **Starch**, reaction products with (epoxyalkyl) quaternary ammonium compds. and/or (epoxyalkyl) amines 112147-20-3DP, reaction products with **starch**
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, as auxiliaries for paper and gypsum manuf., and water purifn.)

IT 1305-62-0, uses and miscellaneous 1343-98-2, Silicic acid
RL: USES (Uses)
(reaction of (epoxyalkyl) quaternary ammonium compds. and/or (epoxyalkyl) amines with **starch** in presence of)

IT **9005-25-8P**
RL: PREP (Preparation)

(sizes, **cationic starch** ethers as, manuf. of)

L71 ANSWER 50 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1987:600721** HCAPLUS
DN **107:200721**
TI Some fundamental aspects on dual component retention aid systems
AU Waagberg, Lars; Lindstroem, Tom
CS STFI, Stockholm, Swed.
SO Nordic Pulp & Paper Research Journal (1987), 2(2), 49-55
CODEN: NPPJEG; ISSN: 0283-2631
DT Journal
LA English
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
AB The **flocculation** characteristics of 3 different dual component retention aid systems, all based mainly on electrostatic interactions, were investigated. In all 3 systems, a very rapid **flocculation** process was obsd., irresp. of concns. of simple electrolyte and added polymer. The rate of **flocculation** was of the same order of magnitude as the calcd. collision frequency between polymers and fibers. Despite the high **flocculation** rate, the addn. of simple electrolytes caused a drastic decrease in degree of **flocculation** and av. diam. of formed flocks for the anionic polyacrylamide (A-PAM)-poly(diallyldimethylammonium chloride (Poly-DADMAC) system. This was attributed to a diffusion of the **cationic** polymer into the pores of the fiber wall. Since internal Poly-DADMAC adsorption decreased the no. of anchoring points for the high-mol.-wt. anionic polymer, it also decreased the degree of **flocculation** and the av. diam. of the formed flocs. Investigation of shear sensitivity for the A-PAM-diethylamine epichlorohydrin resin (PAE) suggested that floc disruption can be divided into 2 consecutive steps. When the shear level is increased from low levels of shear, the large flocs are 1st split into fragments and a smaller diam. of formed flocs is detected. However, when a certain diam. of the fragments (.apprx.2 mm) is reached, they no longer split into fragments but become totally disrupted into individual fibers. For the A-PAM-PAE system, the **cationic** polymer had to be preadsorbed on the cellulosic fibers to produce an efficient type of bridging **flocculation** when the A-PAM was added. When the order of addn. was reversed, a complex **flocculation** mechanism was responsible for the obsd. **flocculation** which is not nearly as extensive as the bridging type. The **cationic potato starch**-anionic silica sol system showed a much smaller floc size at comparatively the same **flocculation** index as the other systems. This was discussed in terms of a very efficient complex **flocculation** since this type of **flocculation** produced comparatively small flocs.
ST dual component retention aid paper; **flocculation** mechanism retention aid paper; polyacrylamide blend retention aid paper; dimethylamine epichlorohydrin resin retention paper; polydiallyldimethylammonium chloride blend retention paper; silica **starch** blend retention paper
IT **Flocculation**
(by dual-component retention aids in paper manuf., mechanism of)
IT Paper
(manuf. of, retention aids for, dual-component, **flocculation** mechanism of)
IT **9005-25-8DP, Starch, cationic**, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(**potato**, retention aids contg., for paper manuf., **flocculation** mechanism of)
IT 9003-05-8D, Polyacrylamide, anionic 25988-97-0 26062-79-3, Poly(diallyldimethylammonium chloride)
RL: USES (Uses)

(retention aids contg., for paper manuf., **flocculation** mechanism of)
IT 7631-86-9P, Silica, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(sol, anionic, retention aids contg., for paper manuf., **flocculation** mechanism of)

L71 ANSWER 51 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1987:596629** HCAPLUS
DN **107:196629**
TI Influence of pH and **ionic strength** on the viscoelastic properties of **starch gels** - a comparison of **potato** and cassava **starches**
AU Muhrbeck, P.; Eliasson, A. C.
CS Dep. Food Technol., Univ. Lund, Lund, S-221 00, Swed.
SO Carbohydrate Polymers (1987), 7(4), 291-300
CODEN: CAPOD8; ISSN: 0144-8617
DT Journal
LA English
CC 17-2 (Food and Feed Chemistry)
AB The influence of pH and electrolytes on the viscoelastic properties of **potato** and cassava **starch** gels was investigated by using a cone-and-plate rheometer run in the oscillatory mode. The gel strength of the **potato starch** gels had a max. around pH 8.5, and was markedly lowered by the addn. of even small amts. of electrolytes. This may be due to an electrostatic interaction between **potato starch** phosphate groups and added **cations**, which blocks the normal phosphate-to-phosphate **crosslinking**. Neither pH nor electrolytes affected the viscoelastic properties of cassava **starch** gels. The gelatinization temp. and the gelatinization enthalpy of **potato starch**, as measured by differential scanning calorimetry, were insensitive to pH and to low electrolyte concns.
ST **starch** gel strength electrolyte; tapioca gel strength elasticity; **potato starch** gel strength elasticity
IT Electrolytes
(**starch** gel strength and viscoelasticity response to)
IT **9005-25-8, Starch**, biological studies
RL: PRP (Properties)
(gel strength and viscoelasticity of, of **potato** and tapioca, electrolytes and pH in relation to)
IT 7447-40-7, Potassium chloride, biological studies 7647-14-5, Sodium chloride, biological studies 10043-52-4, Calcium chloride, biological studies 10108-64-2, Cadmium chloride 12125-02-9, Ammonium chloride, biological studies
RL: BIOL (Biological study)
(**starch** gel strength and viscoelasticity response to)

L71 ANSWER 52 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1987:536232** HCAPLUS
DN **107:136232**
TI **Physicochemical modification** of **starch** of various origin
AU Nebesny, Ewa; Sroczynski, Adam
CS Dep. Chem. Food Technol., Tech. Univ., Lodz, Pol.
SO Acta Alimentaria Polonica (1986), 12(2), 77-81
CODEN: AAPODK; ISSN: 0137-1495
DT Journal
LA English
CC 44-6 (Industrial Carbohydrates)
AB **Potato**, wheat, and corn **starches** were **crosslinked** with urea and etherified with ClCH2CH(OH)CH2N+Me3Cl-. The viscosities of the **crosslinked** wheat and corn

starches were several times greater than that of **crosslinked potato starch**. The hydroxypropylammonium **starches** displayed similar viscosity relations. The wheat- and corn-derived hydroxylammonium **starches** had only half the degree of substitution of the **potato starch** and showed less **cation** activity and water soly.

ST **starch** urea **crosslinking** viscosity; hydroxypropylammonium **starch** prepn property; **potato starch modification**; wheat **starch modification**; corn **starch modification**

IT **Crosslinking**
(of **starch** by urea, viscosity in relation to)

IT **9005-25-8, Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**etherification** of, with chlorohydroxypropyltrimethylammonium chloride)

IT 56780-58-6
RL: PRP (Properties)
(physicochem. properties of, **starch** source effect on)

IT 3327-22-8, 3-Chloro-2-hydroxypropyltrimethylammonium chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch**)

IT 110413-48-4
RL: PRP (Properties)
(viscosity of, **starch** source effect on)

L71 ANSWER 53 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1985:407936** HCAPLUS
DN **103:7936**
TI Paper backing for producing **adhesive** paper
IN Puiu, Mihai; Dediu, Vladimir; Sfrijan, Vasile; Turcheviri, Rodica
PA Intreprinderea de Hirtie, Busteni, Rom.
SO Rom., 5 pp.
CODEN: RUXXA3
DT Patent
LA Romanian
IC D21H001-38
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RO 83689	B	19840315	RO 1981-106223	19811231
PRAI	RO 1981-106223		19811231		

AB Paper supports with good physicochem. properties for release paper for manuf. of leather substitutes are prepd. from 60:40 semibleached softwood pulp-bleached hardwood sulfate pulp slurries contg. **potato starch** and its **cationic** ether deriv. and are sized with oxidized **potato starch**. Thus, a slurry with 3.5-4% consistency from a 60:40 semibleached softwood pulp-bleached hardwood pulp mixt. contg. 2.5% (based on dry pulp) **potato starch** was mixed with 0.2% (based on dry pulp) **cationic** ether deriv. of **potato starch** (as a 2% aq. soln.) and fabricated into paper, which was sized with a 4% aq. oxidized **starch** soln. to give a paper support with basis wt. .apprx.132-142 g/m2, longitudinal and transversal tensile strengths .gtoreq.15 and .gtoreq.7 dN, resp., bursting strength .gtoreq.4 dN/cm2, abs. tear strength .gtoreq.140 g cm/cm (av. of both directions), evenness .gtoreq.15 s (STAS 4760/66), water absorptivity .ltoreq.170 g/m2, longitudinal and transversal surface-pull-out resistance .gtoreq.13 and .gtoreq.11, resp., (STAS 92/59/72), and water content 5-7%.

ST release paper leather substitute manuf; oxidized **starch** size paper; **cationic starch** ether contg paper

IT Leather substitutes

(manuf. of, release paper for)
IT Sizes
(oxidized **starch**, for release paper for manuf. of leather substitutes)
IT Pulp, cellulose
(**starch**- and **cationic starch** ether-contg., for release paper for manuf. of leather substitutes)
IT Parting materials
(release papers, **starch**- and **cationic starch** ether-contg., oxidized **starch**-sized)
IT **9005-25-8**, uses and miscellaneous **9005-25-8D**, **cationic** ether derivs.
RL: USES (Uses)
(paper contg., for release sheets for manuf. of leather substitutes)

L71 ANSWER 54 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1985:222442** HCAPLUS
DN **102:222442**
TI **Potato** hydrolysis material
PA AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.
SO Neth. Appl., 8 pp.
CODEN: NAXXAN
DT Patent
LA Dutch
IC ICM C08B030-12
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 7
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI NL 8302229	A	19850116	NL 1983-2229	19830622
PRAI NL 1983-2229		19830622		

AB **Potatoes** or **potato** wastes are ground, and simultaneously treated with .alpha.-amylase [9000-90-2] and steam to liquefy the **starch** to a dextrose equiv. (DE) of 5-30 and **coagulate** the protein. Thus, **potatoes** are ground with addn. of 500 ppm NaHSO3, heated to 110.degree. by steam injection for .apprx.1 min, adjusted to pH 5.9 at 80.degree., and treated with 0.10% Thermamyl to a DE of 25. The fiber and protein is removed and the remaining soln. is cooled to 60.degree., adjusted to pH 4.5 and further treated with 0.25% glucoamylase [9032-08-0] for 24 h to a DE of 90. Solids formed during **saccharification** are removed and the hydrolysis product is dried to 60% solids before further processing.
ST **potato** hydrolysis amylase; glucoamylase **potato** hydrolysis
IT **Potato**
(hydrolysis of, with amylase-glucoamylase)
IT 9032-08-0
RL: USES (Uses)
(hydrolysis with amylase and, of **potato**)
IT 9000-90-2
RL: USES (Uses)
(hydrolysis with glucoamylase and, of **potato**)
IT **9005-25-8**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**potato**, hydrolysis of, with amylase-glucoamylase)

L71 ANSWER 55 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1985:202901** HCAPLUS
DN **102:202901**
TI **Starch** type additives
PA Ajinomoto Co., Inc., Japan

SO Jpn. Tokkyo Koho, 2 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
IC A23L001-10
CC 17-6 (Food and Feed Chemistry)
Section cross-reference(s): **63**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59053015	B4	19841222	JP 1977-110824	19770914
	JP 54044057	A2	19790407		
PRAI	JP 1977-110824		19770914		

AB **Starch** type additives are prepd. by pulverizing dextrin [9004-53-9] film of DE 2-10 (2-10 dextrose equiv.). The pulverized DE 2-10 dextrin prepns. are useful as bulking agents for flavor enhancers and foods and pharmaceuticals. Thus, 500 g sweet **potato starch** [**9005-25-8**] was suspended in 2 L pH 6.8 NaOH and hydrolyzed with a com. **saccharification** enzyme to form DE 5 dextrin prepn. The DE 5 dextrin prepn. was purified with celite and activated C, dried under vacuum to form DE 5 dextrin film which was subsequently pulverized to 25-50 mesh dextrin granules. The DE 5 dextrin granules were transparent, colorless, and odorless, and when used as a bulking agent for Na glutamate [142-47-2] did not change the taste or luster of the Na glutamate prepn.

ST dextrin bulking agent food pharmaceutical; sodium glutamate bulking agent dextrin; flavor enhancer bulking agent dextrin

IT Food
Pharmaceuticals
(dextrin bulking agent for)

IT Condiments
(flavor-enhancing, dextrin bulking agent for)

IT 142-47-2
RL: BIOL (Biological study)
(dextrin bulking agent for)

IT **9005-25-8**, biological studies
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, in bulking agent manuf. for food and pharmaceuticals)

IT 9004-53-9P
RL: PREP (Preparation)
(prepn. of, as bulking agent for food and pharmaceuticals)

L71 ANSWER 56 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1982:443692** HCAPLUS
DN **97:43692**
TI **Starch** derivatives in water treatment
AU Manguin, Henri; Ansart, Michel
CS Etabl. Paul Doittau, Fr.
SO Eau et l'Industrie (1981), 53, 90-4
CODEN: EINSDK; ISSN: 0337-9329
DT Journal
LA French
CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 43, 44, 54, 61

AB **Potato starch**-derived **flocculants**, e.g., **starch** phosphates, used in the treatment of potable waters and industrial wastewaters, e.g., paper processing effluents, exhibited high macromolecularity, cold-water soly., and marked anionic properties.

ST **potato starch** wastewater **flocculation**; potable water **flocculation starch** deriv

IT Ore treatment
(sludge from, **flocculation** of, by **potato starch** derivs.)

IT Paper
(wastewater from processing of, **flocculation** of, by **potato starch** derivs.)
IT Wastewater treatment
(**flocculation**, by **potato starch** derivs.)
IT Water **purification**
(**flocculation**, of potable waters, by **potato starch** derivs.)
IT **9005-25-8D**, derivs.
RL: PROC (Process)
(**flocculants**, potable water and wastewater treatment by)
IT **9005-25-8**, uses and miscellaneous
RL: USES (Uses)
(**potato**, **flocculants**, in potable water and wastewater treatment)
IT 57-50-1P, preparation
RL: PREP (Preparation)
(wastewater from processing of, **flocculation** of, by **potato starch** derivs.)

L71 ANSWER 57 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1981:123496 HCAPLUS
DN 94:123496
TI **Corrugated paperboard adhesives** for use in high-speed **corrugators**
PA Hohnen Oil Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C09J003-06; B32B029-00
CC 44-5 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55139474	A2	19801031	JP 1979-46151	19790416
	JP 57030869	B4	19820701		
PRAI	JP 1979-46151		19790416		

AB Epichlorohydrin (I) [106-89-8]- or HCHO [50-00-0]-**crosslinked starch** [**9005-25-8**] with gel strength 1.5-4 kg is used in **adhesives**. Thus, 840 L water (60.degree.) contg. HS-800 (**starch**) 104, borax 2, and NaOH 9.4 kg is mixed with 1260 L water (35.degree.) contg. 446 kg I-**crosslinked potato starch** and 9.9 kg borax, stirred 30 min, and used to prep. paperboard with adhesion 23.1 kg at 250 m/min, compared with 22.9 kg at 200 m/min for an **adhesive** contg. **uncrosslinked** corn **starch**.
ST epichlorohydrin **crosslinking starch adhesive** ; formaldehyde **crosslinking starch adhesive**; paperboard **adhesive starch crosslinked**
IT **Crosslinking agents**
(epichlorohydrin and formaldehyde, for **starch adhesives**)
IT **Adhesives**
(**starch**, **crosslinking** agents for)
IT **9005-25-8**, uses and miscellaneous
RL: USES (Uses)
(**adhesives**, **crosslinking** agents for)
IT 50-00-0, uses and miscellaneous 106-89-8, uses and miscellaneous
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agent, for **starch adhesives**)

L71 ANSWER 58 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1981:105259** HCAPLUS
DN **94:105259**
TI **Starch** preparation with an electropositive charge
IN Mezynski, Leonard; Urbaniak, Grzegorz
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 3 pp.
CODEN: POXXA7
DT Patent
LA Polish
IC C08B031-08
CC 44-5 (Industrial Carbohydrates)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI PL 107566	P	19800229	PL 1976-192728	19760928
PRAI PL 1976-192728		19760928		

AB **Cationic starch** [**9005-25-8**] derivs. with improved soly. and dispersibility in cold water and improved **flocculating** properties and retention capacity in the manuf. of paper are prepd. by **etherification** of **starch** with tri- or tetraalkylammonium compds., neutralization, treatment with Na2SO4 3-7, Na2CO3 3-6, Al2(SO4)3 0.5-2, and Na2B4O7 0.2-0.4 part/100 parts **starch**, and drying in roll dryer at 130-50.degree.. Thus, to 1000 part **potato starch** in 1100 parts water contg. 44 parts Na2SO4 was added at 25.degree. 3% NaOH 250, Et2NCH2CH2Cl.HCl [869-24-9] 20, and again 3% NaOH 250 parts. After 10 h the substitution degree was 0.015, and the mixt. was neutralized with H2SO4, treated with Na2CO3 40, Al2(SO4)3 8.2, and Na2B4O7 3 parts, and dried at 145.degree./5 atm.
ST **starch** ammonioalkyl ether; **flocculant cationic starch** manuf; retention agent **cationic starch**
IT **Flocculating** agents
(**cationic starch**, manuf. of)
IT Paper
(manuf. of, retention agents for, **cationic starch** manuf. for)
IT **Etherification**
(of **starch**, with aminoalkyl chlorides)
IT **9005-25-8**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**etherification** of, with aminoalkyl chlorides)
IT 497-19-8, uses and miscellaneous 1330-43-4 7757-82-6, uses and miscellaneous 10043-01-3
RL: USES (Uses)
(in **cationic starch** manuf.)
IT 9041-94-5P 56780-58-6P
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, process for)
IT 869-24-9 3327-22-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch**)

L71 ANSWER 59 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1980:99446** HCAPLUS
DN **92:99446**
TI Cosmetic bases
IN Yanagawa, Takuma; Kawada, Yasuyuki; Saika, Daini
PA Lion Fat and Oil Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC A61K007-00

CC 62-4 (Essential Oils and **Cosmetics**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 54086629	A2	19790710	JP 1977-153417	19771220
	JP 60042761	B4	19850925		
PRAI	JP 1977-153417		19771220		

AB A toilet article base which consists of a denatured **starch cation** with a quaternary N content of 1-5 wt.%, obtained by reaction of a glyceryltrimethylammonium salt or 3-halo-2-hydroxypropyltrialkylammonium salt with **starch**, is prepd. Thus, **potato starch** (50 g) in 50% aq. Me2CHOH (150 g) was treated with aq. NaOH (9.9 g), dissolved, and the resulting soln. was treated with aq. glyceryltrimethylammonium chloride (<5 mol), heated 3 h at 50.degree., concd. HCl (4.2 g) added, the soln. dild. with aq. Me2CHOH (150 g), and after 1 h at room temp. the ppt. was recrystd. from MeOH 3 times and dried to give a **starch cation** contg. 2.63 wt.% of the quaternary N compd. A typical compn. contained Mg lauryl sulfate 10 or Na lauryl sulfate 10, lauric acid triethanolamine salt 5, coconut oil fatty acid diethanolamine salt 5, denatured **starch cation** 1, edetate sodium 0.1 wt.% and perfume, dye, preservative, and water to total 100 wt.%.

ST toilet article base; **starch** quaternary cosmetic base

IT **Cosmetics**
(bases for, denatured **cationic starch** contg. quaternary ammonium salts for)

IT Quaternary ammonium compounds, compounds
RL: BIOL (Biological study)
(reaction products with **starch**, cosmetic bases contg.)

IT **9005-25-8D**, reaction products with quaternary ammonium salts
34004-36-9D, reaction products with **starch**
RL: BIOL (Biological study)
(cosmetic bases contg.)

L71 ANSWER 60 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1979:56715** HCAPLUS
DN **90:56715**
TI High-viscosity **cationic starches**
IN Takeda, Hisao; Kawano, Mutsumi
PA Kyoritsu Yuki Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C08B031-12
CC 44-5 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53123486	A2	19781027	JP 1977-37533	19770404
	JP 60011723	B4	19850327		
PRAI	JP 1977-37533		19770404		

AB **Starches** were treated with Me3N or Et3N and epichlorohydrin (I) at I-amine molar ratio 1:1.5-2 to prep. biodegradable **cationic starches** which were **flocculating** agents for the used as residual mud during the treatment of human waste. Thus, 20 parts **potato starch** was stirred in 180 parts water at 70.degree., cooled to 50.degree., mixed with 36.3 parts 30% aq. Me3N and 11.4 parts I, and allowed to react for 4 h to prep. **cationic starch**.

ST **cationic starch flocculating** agent; wastewater treatment **cationic starch**

IT Wastewater treatment

(**flocculation**, agents for, epichlorohydrin-trimethylamine-**starch** reaction products as)

IT 75-50-3D, reaction products with epichlorohydrin and **starch**
106-89-8D, reaction products with **starch** and triethylamine
121-44-8D, reaction products with epichlorohydrin and **starch**
9005-25-8D, reaction products with epichlorohydrin and triethylamine
RL: USES (Uses)
(**flocculating** agents)

L71 ANSWER 61 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1979:40519** HCAPLUS
DN **90:40519**
TI **Cationic starches**
IN Takeda, Hisao; Kawano, Mutsumi
PA Kyoritsu Yuki Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C08B031-00
CC 44-5 (Industrial Carbohydrates)
Section cross-reference(s): 60
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53121886	A2	19781024	JP 1977-36098	19770401
	JP 60011722	B4	19850327		
PRAI	JP 1977-36098		19770401		

AB **Starch** was carbamoylethylated and treated with HCHO and Me2NH or Et2NH to prep. **flocculants** for sewage disposal. Thus, 16.2 parts **potato starch** was dissolved in 162 parts water at 70.degree., cooled to 40.degree., mixed with 0.5 part NaOH and 7.1 parts acrylamide, heated at 55.degree. for 18 h mixed with 8.1 parts 37% aq. HCHO and 10.8 parts 50% aq. Me2NH, and heated at 40.degree. for 4 h to prep. **cationic starch**.

ST **starch flocculant** sewage disposal; **cationic starch flocculant**; Mannich reaction carbamoylethylated **starch**

IT Wastewater treatment
(**flocculating** agents for, **cationic starch** as)

IT Mannich reaction
(of carbamoylethylated **starch**)

IT 50-00-0D, reaction products with carbamoylethylated **starch** and dimethylamine 109-89-7D, reaction products with carbamoylethylated **starch** and formaldehyde 124-40-3D, reaction products with carbamoylethylated **starch** and formaldehyde **9005-25-8D**, carbamoylethylated, reaction products with dialkylamines and formaldehyde
RL: USES (Uses)
(**flocculants**, for wastewater treatment)

L71 ANSWER 62 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1978:63491** HCAPLUS
DN **88:63491**
TI Studies on **cationic** polymers. II. Preparation and **flocculation** effect of **cationic starch**
AU Nishiuchi, Toyomichi; Nishiuchi, Natzu; Kobayashi, Kumiko
CS Fac. Educ., Kochi Univ., Kochi, Japan
SO Nippon Kagaku Kaishi (1977), (11), 1711-16
CODEN: NKAKB8; ISSN: 0369-4577
DT Journal
LA Japanese

CC 44-5 (Industrial Carbohydrates)
Section cross-reference(s): 60, 61
AB Reaction of corn- or **potato starch** [**9005-25-8**] successively with epichlorohydrin [106-89-8] and triethylamine [121-44-8] gave a **cationic** deriv. which acted as a **flocculating** agent for kaolin suspensions. A degree of **etherification** of .apprx.0.4 was obtained by treating 1 gm **potato starch** with 10 mL epichlorohydrin in 10 mL 0.2% H2SO4 at 45.degree. for 24 h; the degree of **etherification** was increased and the yield decreased by repeating the reaction. When a 2% aq. soln. contg. 1 g of the etherified **starch** (**etherification** degree 0.6) was treated with 1-6 mL Et3N at 60.degree. for 1 h, 42-50% of the Cl substituent was converted into triethylammonium chloride groups. A kaolin suspension was satisfactorily clarified when 0.1% (based on kaolin) of the **cationic starch** was added.
ST **cationic starch flocculating** agent; epichlorohydrin **etherification starch**; amine substitution chloroalkyl **starch**
IT **Flocculating** agents
(**cationic starch** derivs., for kaolin suspensions)
IT Kaolin, uses and miscellaneous
RL: USES (Uses)
(**flocculation** of suspensions of, by **cationic starch** derivs.)
IT **Etherification**
(of **starch**, with epichlorohydrin)
IT Quaternization
(of triethylamine, with chlorohydroxypropyl **starch**)
IT Quaternary ammonium compounds, uses and miscellaneous
(**starch** derivs., **flocculating** agents, for kaolin suspensions, prepn. of)
IT **9005-25-8D**, **cationic** deriv.
RL: USES (Uses)
(**flocculating** agents, for kaolin suspensions, prepn. of)
IT 121-44-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorohydroxypropyl **starch**)
IT **9005-25-8**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with epichlorohydrin)
IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch**)
IT 65324-73-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with triethylamine)

L71 ANSWER 63 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1974:436637** HCAPLUS
DN **81:36637**
TI Hydration and **gelation** of modified **potato starches**
AU Chilton, W. G.; Collison, R.
CS Dep. Catering Stud., Huddersfield Polytech., Queensgate/Huddersfield, UK
SO Journal of Food Technology (1974), 9(1), 87-93
CODEN: JFOTAP; ISSN: 0022-1163
DT Journal
LA English
CC 17-4 (Foods)
Section cross-reference(s): 44
AB The gelation characteristics of natural **potato starch** and 2 modified **starches** were compared with their water sorption

isotherms detd. at 25.degree.. The pregelatinized **starch** gels more readily than the natural **starch**, but has a lower water sorption capacity at <90% relative humidity. The **cross-linked starch** gels less readily than the normal **starch** on heating but has a similar water sorption isotherm.
ST **starch modification** gelation; water sorption **starch**
IT Sorption
(of water, by **starch**, **cross-linking** and pregelatinization in relation to)
IT **9005-25-8**, properties
RL: PRP (Properties)
(gelation and hydration of, of **potato**, **cross-linking** and pregelatinization in relation to)
IT 7732-18-5
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(sorption of, by **starch**, **cross-linking** and pregelatinization in relation to)

L71 ANSWER 64 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1974:100171** HCAPLUS
DN **80:100171**
TI **Potato starch** in tablet production
AU Kala, H.; Huenerbein, B.; Chwojka, E.; Moldenhauer, H.
CS Sekt. Pharm, Martin-Luther-Univ. Halle-Wittenberg, Halle/Saale, Ger. Dem. Rep.
SO Pharmazie (1973), 28(11-12), 785-9
CODEN: PHARAT; ISSN: 0031-7144
DT Journal
LA German
CC 63-6 (**Pharmaceuticals**)
AB Eight batches of **potato starch** were studied for compliance with the requirements of the DAB 7, DDR and the **specifications** of the appropriate TGL (3069). Variations in anal. values were small and the quality of the compressed products was not influenced by these differences. Studies included H2O content (12-20%), N content, ash content (0.1-0.34%), SO2 content (0.72-2.72%), degree of acidity, pH (5.6-6.0), **starch** granule size and size distribution (5-75 .mu. mostly 10-30 .mu., over 40 .mu. very variable %), and degree of decompn. The mech. properties of the tablets are dependent on the drying intensity of the granulation process; but the H2O content of the **starch** has no recognizable influence. Uniform drying at a raised temp. (35.degree.) was preferable to drying at room temp. (21.degree.). When **starch** was dried at 40.degree. (as recommended for **starch** use as a disintegrating agent), a rapid loss of H2O occurred for the first 5 hr, followed by no further loss (to 24 hr). **Starch** dried at 110.degree. retained 0.2-0.3% H2O. When this was stored 48 hr in hygrostats with 30, 50, and 70% relative humidity, the H2O content was 5.7-6.0, 8.4-8.7, and 11.5-12.2%, resp. From a study of the compressed tablet characteristics, no differences could be found between those made with untreated **starch** and those with hot-air-pretreated **starch**.
ST **starch** tablet disintegrant
IT Tablets
(disintegrant for, **starch** as)
IT **9005-25-8**, biological studies
RL: BIOL (Biological study)
(tablet disintegrant)

L71 ANSWER 65 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1973:17995 HCAPLUS
DN 78:17995
TI **Starch products** in glueing of wood materials by

synthetic resin **adhesives**
AU Plath, Lore
CS Gernsbach, Fed. Rep. Ger.
SO Staerke (1972), 24(9), 306-12
CODEN: STRKA6; ISSN: 0038-9056
DT Journal
LA German
CC 44-5 (Industrial Carbohydrates)
Section cross-reference(s): 37
AB In the wood processing industry, considerable amts. of **starch** [**9005-25-8**] products (A) were used as extender for the glueing with aminoplasts (urea and melamine resin) **adhesives**. A had rheol., **crosslinkage**-regulating, and stress-balancing actions. The upper limit of the amt. of A according to glueing quality stds. was detd. by investigation of statistically evaluated plywood glueings. The behavior of A in the glueline was exam. by microscopic investigations of stained microtome sections from glued objects.
ST **starch** extender glueing wood; urea resin **adhesive** wood; melamine resin **adhesive** wood; aminoplast **adhesive** wood
IT Aminoplasts
RL: USES (Uses)
(**adhesives**, contg. **starch**, for plywood)
IT Corn flour
Rice flour
Rye flour
Wheat flour
(**adhesives**, contg. urea resins, for plywood)
IT **Potato**
(flour, **adhesives**, contg. urea resins, for plywood)
IT **Adhesives**
(urea resins contg. **starch**, for plywood)
IT 9003-20-7
RL: USES (Uses)
(**adhesives**, contg. **starch**, for plywood)
IT **9005-25-8**, uses and miscellaneous
RL: USES (Uses)
(**adhesives**, contg. urea resins, for plywood)

L71 ANSWER 66 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1969:514436** HCAPLUS
DN **71:114436**
TI **Modification** of **starch** with pullulanase to increase its **adhesive** power
PA Scholten Research N. V.
SO Fr., 3 pp.
CODEN: FRXXAK
DT Patent
LA French
IC C13L
CC 44 (Industrial Carbohydrates)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI FR 1559081		19690307	FR	19680119

AB **Starch** is incubated with the enzyme pullulanase (prepd. from Aerobacter aerogenes as described in Ger. 1,193,914). The modified **starch** has a greater tendency toward retrogradation than **starch** modified by other methods, has a higher affinity (5.6% compared with 4.1%) for I than does the unmodified **starch**, and has good **adhesive** properties. Thus, 75 parts **potato** **starch** in 1000 parts citrate buffer (0.005 mole concn., pH 5) was dispersed by cooking the suspension for 15 min. The compn. was cooled to

30.degree. and incubated with 9 units pullulanase for 5 hrs. The viscosity of the dispersion was 1062, 216, 150, and 102 cp. after 0, 1, 2, and 5 hrs., resp. The enzyme was then **coagulated** by cooking and the **starch** was dried.

ST **starch modification** pullulanase; pullulanase **starch modification; potato starch modification; adhesives starch**

IT Aerobacter

IT **Adhesives**, preparation
(**starch** modified with pullulanase)

IT **9005-25-8**, properties
RL: PRP (Properties)
(**adhesiveness** of pullulanase-modified)

IT 9012-47-9, Glucosidases, **amylopectin** 1,6-
(from Aerobacter aerogenes, **starch** modified with, **adhesiveness** of)

L71 ANSWER 67 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1969:433300** HCAPLUS

DN **71:33300**

TI **Potato starch** as a sludge conditioner

AU Vogh, Richard P.; Warrington, James E.; Black, Alvin Percy

CS USA

SO Journal - American Water Works Association (1969), 61(6), 276-84
CODEN: JAWWA5; ISSN: 0003-150X

DT Journal

LA English

CC 61 (Water)

AB New water softening plants in Florida have experienced serious torque problems, in the sludge rake mechanisms, from resistant sludge. After a relatively short period of using lime softening which activated silica as the **flocculant**, the torque caused by the sludge would become so high as to render the reactor inoperable. A form of **potato starch** which swells in cold water was found to condition the sludge properly at very moderate cost with little extra work, and a new torque tester evolved from the research. The action of **potato starch** as **flocculant** in water softening is discussed.

ST **potato starch flocculants** water; **starch potato flocculants** water; **flocculants** water **potato starch**

IT Water **purification**
(softening, conditioning of sludge from, by **starch**)

IT **9005-25-8**, uses and miscellaneous
RL: USES (Uses)
(as water-softening-sludge conditioner)

L71 ANSWER 68 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1965:499395** HCAPLUS

DN **63:99395**

OREF 63:18367b-c

TI Water-soluble polymers

IN Takahashi, Takeshi; Okamoto, Yoshio

PA Daiichi Kogyo Seiyaku Co., Ltd.

SO 2 pp.

DT Patent

LA Unavailable

CC 48 (Plastics Technology)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 40016150		19650726	JP	19611120

AB Reaction of polysaccharides, their etherified derivs., or poly(vinyl alc.) with dicarboxylic anhydrides and subsequent neutralization of the

resulting monoesters yielded polymers with a higher H2O soly. Thus, heating an agitated mixt. of 16 parts dried **potato starch** and 5 parts succinic anhydride at 120.degree. for 5 hrs. gave a monoester, acid value 200, sapon. value 395. The monoester was neutralized with 10 parts pulverized Na2CO3 and by spraying 2-3 parts H2O. The product was readily sol. in warm H2O and useful as a stabilized **adhesive.**

IT Vinyl compound polymers
(by **esterification** of vinyl alc. polymers with dicarboxylic anhydrides and neutralization of monoesters therefrom)
IT Plastics and Resinous products
(moldings with reduced friction from ethylene polymers and)
IT Anhydrides
(reaction products of dicarboxylic, with polysaccharides, vinyl alc. polymers, etc.)
IT Polysaccharides
(reaction products with dicarboxylic anhydrides, water-sol.)
IT **Adhesives**
(**starch** water-sol. reaction products with succinic anhydride as)
IT 9002-88-4, Ethylene polymers
(moldings with reduced friction from, nylon 6 or polyoxymethylenes and)
IT **9005-25-8, Starch**
(reaction product with succinic anhydride, water-sol.)
IT 108-30-5, Succinic anhydride
(reaction products with **starch**)
IT 9002-89-5, Vinyl alcohol polymers
(reaction with dicarboxylic anhydrides for water-sol. products)
IT 110-15-6, Succinic acid
(**starch** H ester)

L71 ANSWER 69 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1959:128236** HCAPLUS
DN **53:128236**
OREF 53:23019f-h
TI Tough **starch adhesives** and coatings
IN Lehmann, Rene L.; Gandon, Louis
PA Bozel-Maletra, Societe industrielle de produits chimiques
DT Patent
LA Unavailable
CC 28 (Sugars, Starch, and Gums)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1120163		19560702	FR	

AB To prep. **starch adhesives** and coatings which resist the action of H2O and rubbing, a **starchy** material (sol. **starch**, dextrin, corn **starch**, etc.) is treated with glyoxal or one of its derivs. in the presence of H2O, either at room or an elevated temp., preferably in an acid medium. Evapn. of the solvent yields a product with the above properties. For example, 100 parts **potato starch** was mixed with 500 parts H2O and 50 parts 50% glyoxal. The resulting **adhesive** was effectively preserved. After **application** to a surface and allowing the H2O to evap., a tough H2O-resistant film or coating was obtained. The product has **applications** in the glue, paint, wallpaper, and textile fields.

IT Textiles
(**adhesives** and coatings for, **starch**-glyoxal reaction product for)
IT **Adhesives**
(**starch**, glyoxal-modified)
IT Coating(s)
(**starch**, glyoxal-toughened)

IT Paint
(**starch**-glyoxal reaction product for)
IT Paper
(wall-, **starch**-glyoxal reaction product for)
IT Glyoxal, cyclic bis(ethylene mercaptal)
(and derivs., **starch** treated with, for tough **adhesives** and coatings)
IT 9004-53-9, Dextrin
(glyoxal-treated, for tough **adhesives** and coatings)
IT **9005-25-8, Starch**
(glyoxal-treated, for toughness)

L71 ANSWER 70 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1959:91940** HCAPLUS
DN **53:91940**
OREF 53:16565f-i,16566b-c
TI Some factors affecting the **behavior** of **starch** as a **flocculant** in cane-sugar juice
AU Bennett, M. C.
CS Imp. Coll. Trop. Agr., Trinidad
SO Chem. & Ind. (London) (1958) 1552-3
DT Journal
LA Unavailable
CC 28 (Sugars, Starch, and Gums)
AB The factors affecting the activity of a **starch** soln. in a **flocculated** cane-sugar juice sample contg. a const. **starch** concn. (50 p.p.m.) are described in terms of the sedimentation rates. The latter were detd. (as the settling const., K) by the Schmidt method and expressed as percentages of the rate obtained in the absence of **starch**. The effects of bound phosphate (P) content, small concns. of electrolytes in the soln., and variations in the concn. of **starch** in the soln. added (and accordingly varying the vol. added so that a const. concn. of 50 p.p.m. in the juice is maintained) on the activity of **starch** were studied. The results are plotted in terms of activity (% effect) against bound P (mg./g. **starch**), **cation** concn. (meq./l.), and **starch** concn. (g./l.). The bound P contents of a **starch** soln. contg. 3.5 g./l. were calcd. as the difference between total and admixed inorg. P. Sepn. of the latter was effected by prepg. an aq. soln. of the **starch**, pptg. the **starch** in 70% EtOH, and centrifuging. The activity of the 4 different **potato starches** was shown to increase with bound P contents. The decrease in the activity of **starch** soln. with increasing concns. of Na, Mg, and La chloride paralleled by decrease in the viscosity of the soln. is attributed to the decrease in the electrostatic effect between the neg. charged P centers in the **amylopectin** residues and the resulting contraction of the flexible **amylopectin** structure. The increase in the activity of the **starch** soln. by increasing the **starch** concn. in the soln. added was manifested by a rapid increase in the viscosity, but the 2 effects did not run parallel. Retrogradation in the **starch** soln. is accompanied by a decrease in its activity; after 8 days, a 3.5 g./l. **starch** soln. no longer affected the sedimentation of the preflocculated cane juice. The **flocculating** activity of **starch** could be described in terms of a **starch** network in which **amylopectin** aggregates are bound to the surface of the preformed flocs through their esterified phosphate groups, while the flocs are **crosslinked** by **starch**-**starch** bonds that already existed in the soln. added.
IT Sugar cane
(ash in juices of)
IT Bonds
(between **amylopectins** and flocs in sugar juices)
IT Sugar manufacture

(**clarification** or juice **purification**, **starch** in)
IT Electrolytes
Phosphates
(effect on **starch flocculant** in sugar juices)
IT Ashes
(in sugar cane juices)
IT **Amylopectins**
(in sugar juices, as **flocculants**)
IT Sedimentation
(in sugar-cane juices, **starch flocculating** action and)
IT Sugar cane
(**starch** as **flocculant** in juices from)
IT 7439-91-0, Lanthanum 7439-95-4, Magnesium 7440-23-5, Sodium
(effect on **starch flocculant** in sugar juice)
IT 7723-14-0, Phosphorus
(in sugar cane juice)
IT 7439-95-4, Magnesium 7440-70-2, Calcium
(in sugar cane juices)
IT **9005-25-8, Starch**
(in sugar juice, as **flocculant**)
IT 7440-09-7, Potassium
(in sugar-cane juice)

=> d l72 all tot

L72 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **2003:340672** HCAPLUS
TI Preparation and **flocculation** of **cationic** **flocculating** agent of modified **potato starch**
AU Feng, Yunsheng; Zhao, Xin; Dong, Guowen
CS Institute of Chemistry and Chemical Engineering, Qiqihar University, Qiqihar, 161006, Peop. Rep. China
SO Huagong Shikan (2002), 16(10), 39-41
CODEN: HUSHFT; ISSN: 1002-154X
PB Huagong Shikan Zazhishe
DT Journal
LA Chinese
CC 61 (Water)
AB A **flocculating** agent PSF was prepd. by grafting acrylamide on **potato starch** alkalified by NaOH to obtain modified **potato starch** and reacting with tertiary amine, its **flocculation** for kaoline wastewater and wastewater from sugar/leather factory was studied. The effect of PSF dosage and pH on the **flocculation** was discussed. The results showed PSF had good **flocculation** for wastewater from sugar/leather factory.
ST **flocculating** agent **potato starch** **flocculation**

L72 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **2003:336888** HCAPLUS
TI Small **granule potato starch**, structure and usability
AU Lewandowicz, G.; Blaszczak, W.; Walkowski, A.
CS Starch and Potato Products Research Laboratory, Lubon, 62-030, Pol.
SO Zywnosc (2002), 9(4, Supl.), 84-97
CODEN: ZYWNFL
PB Polskie Towarzystwo Technologow Zywnosci, Oddzial Malopolski
DT Journal
LA English
CC 44 (Industrial Carbohydrates)

AB Small granule **potato starch** (SGPS) produced by "Wielkopolskie Przedsiebiorstwo Przemyslu Ziemniaczanego" during **potato starch** prodn. season 1999 was investigated to evaluate its physicochem. properties, structure and usability. SPGS was used as a raw material for different **modification** processes typically applied in the Polish **starch** industry to obtain both food and non-food products. The obtained prepns. were compared with industrial products: food grade modified **starches** E 1403, E 1404, E 1412, E 1414 and E 1422, as well as two types of prepns. for paper industry - oxidised **starch** for wet end **application** and corrugated board **adhesive**. The exptl. and ref. **starch** samples were examd. by chem. anal., rheol. methods, SEM and X-ray diffractometry. Textural parameters of deserts prepd. by means of food grade modified **starches** as well as some specific functional properties of industrial prepns. were investigated. It was found that SPGS like std. **potato starch** contained quite small amts. of inorg. impurities as well as crude fiber, revealed similar rheol. properties but relatively low crystallinity. SGPS due to its unique physicochem. properties could be recommend as a raw material for the prodn. of corrugated board **adhesive**. Reactivity of SGPS towards sodium hypochlorite was found lower as compare to std. one. On the contrary susceptibility of SGPS to **crosslinking** with sodium trimetaphosphate seemed to be higher than of std. **starch**. The texture of food grade modified **starches** much differed from std. counterparts, which make possible to extent the assortment of these type products.

L72 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **2003:19782** HCAPLUS
TI Microcapsules from **starch** granules
AU Korus, J.; Tomasik, P.; Lii, C. Y.
CS University of Agriculture, Krakow, 31 120, Pol.
SO Journal of Microencapsulation (2003), 20(1), 47-56
CODEN: JOMIEF; ISSN: 0265-2048
PB Taylor & Francis Ltd.
DT Journal
LA English
CC 63 (**Pharmaceuticals**)
AB A prepn. of microcapsules from granular **potato starch** by its prolonged (up to 48 h) soaking in water is proposed. The effects of temp. and size of granules is studied. Such treatment removes the amorphous part of the granule interior, forming empty domains inside granules. Material evacuated from the granules was identified as **amylopectin** together with **amylose**. The **application** of such pre-treated granules for microencapsulation of various fragrant compds. (angelicalactone, diacetyl, dibenzyl ether, 2,6-lutidine and myrcene) from their vapors and from their liq. state is described. Depending on pre-treatment of **starch** and the microencapsulation method applied, the amt. of trapped guest mols. is up to 30 wt%.
RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Awad, A; Food Technology 1993, V47, P146 HCAPLUS
(2) Baker, R; Starch/Die Staerke 1967, V19, P399 HCAPLUS
(3) Carr, M; Cereal Chemistry 1999, V68, P262
(4) Carr, M; Starch/Die Staerke 1994, V46, P9 HCAPLUS
(5) Chen, A; Food Technology 1988, V42, P87 HCAPLUS
(6) Chen, A; International Sugar Journal 1996, V96, P493
(7) Chociej, J; Acta Alimentaria Polonica 1983, V111, P36
(8) Doane, W; US 4911952 1990 HCAPLUS
(9) Eden, J; US 4812445 1989 HCAPLUS
(10) Filatova, A; Russian Chemical Bulletin, International Edition 2000, V49, P314 HCAPLUS

(11) Fleming, G; Weed Science 1992, V40, P606 HCAPLUS
(12) Gallant, D; Carbohydrate Polymers 1997, V32, P177 HCAPLUS
(13) Golovnya, R; Nahrung 1998, V42, P380 HCAPLUS
(14) Golovnya, R; Russian Chemical Bulletin, International Edition 2000, V49, P1471 HCAPLUS
(15) Golovnya, R; Starch/Die Staerke 2001, V53, P269 HCAPLUS
(16) Jizomoto, H; Pharmaceutical Research 1993, V10, P1115 HCAPLUS
(17) Korus, J; PhD Thesis, University of Agriculture 1999
(18) Korus, J; Polish Journal of Food and Nutrition Sciences 2001, V10, P17 HCAPLUS
(19) Lai, V; International Journal of Food Science and Technology 2001, V36, P321 HCAPLUS
(20) Lh, C; Food Hydrocolloids, in press 2001
(21) Lh, C; International Journal of Food Science and Technology, in press 2002
(22) Mauro, D; Cereal Foods World 1996, V41, P776 HCAPLUS
(23) McGuire, M; American Chemical Society Symposium Series 1995, V595, P229 HCAPLUS
(24) Mevrosh, T; Weed Science 1995, V43, P445
(25) Misharina, T; Russian Chemical Bulletin, International Edition 1998, V47, P1889 HCAPLUS
(26) Morrison, W; Cereal Science 1983, V1, P9 HCAPLUS
(27) Polaczek, E; Carbohydrate Polymers 1999, V39, P37 HCAPLUS
(28) Polaczek, E; Carbohydrate Polymers 2000, V43, P291 HCAPLUS
(29) Schulze, W; Starch/Die Staerke 1964, V16, P41 HCAPLUS
(30) Shasha, B; Controlled Release Technologies; Methods, Theory and Application 1980, P207 HCAPLUS
(31) Shasha, B; Journal of Polymer Science, Polymer Chemistry Edition 1981, V19, P1891 HCAPLUS
(32) Starzyk, F; Polish Journal of Food and Nutrition Sciences, in press 2001
(33) Szejtli, J; Cyclodextrin inclusion complexes 1984
(34) Szymonska, J; International Journal of Biological Macromolecules 2000, V27, P307 HCAPLUS
(35) Terenina, M; Russian Chemical Bulletin, International Edition 1999, V48, P730 HCAPLUS
(36) Terenina, M; Russian Chemical Bulletin, International Edition 2001, V50, P1032 HCAPLUS
(37) Tirkkonen, S; Journal of Microencapsulation 1994, V11, P615 HCAPLUS
(38) Tomasik, P; Advances in Carbohydrate Chemistry and Biochemistry 1998, V53, P263 HCAPLUS
(39) Tomasik, P; Advances in Carbohydrate Chemistry and Biochemistry 1998, V53, P345 HCAPLUS
(40) Tomasik, P; Prace Naukowe Instytutu Chemii i Technologii Nafty i Wegla Politechniki Wroclawskiej, Seria Monografie 1974, V19, 5, P34
(41) Trimnell, D; Journal of Applied Polymer Science 1982, V27, P3919 HCAPLUS
(42) Trimnell, D; Journal of Controlled Release 1988, V7, P25 HCAPLUS
(43) Trimnell, D; Journal of Controlled Release 1990, V12, P251 HCAPLUS
(44) Trimnell, D; Starch/Die Staerke 1991, V43, P146 HCAPLUS
(45) Wing, E; ASTM Special Technical Publications 1990, V1078, P17
(46) Wing, R; Journal of Controlled Release 1987, V5, P79 HCAPLUS
(47) Wing, R; Journal of Controlled Release 1988, V7, P33 HCAPLUS
(48) Wing, R; Starch/Die Staere 1987, V39, P422 HCAPLUS
(49) Wittwer, F; US 5427614 1995 HCAPLUS
(50) Young, S; Journal of Dairy Sciences 1993, V66, P2878
(51) Yu, D; Starch/Die Staerke 1965, V17, P75 HCAPLUS

L72 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **2002:723648** HCAPLUS
DN **137:312621**
TI **Starch** derivatives of high degree of functionalization Part 8. Synthesis and **flocculation** behavior of **cationic starch** polyelectrolytes
AU Haack, Vera; Heinze, Thomas; Oelmeyer, Gert; Kulicke, Werner-Michael
CS Institute of Organic and Macromolecular Chemistry, Friedrich Schiller

University of Jena, Jena, D-07743, Germany
SO Macromolecular Materials and Engineering (2002), 287(8), 495-502
CODEN: MMENFA; ISSN: 1438-7492
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
CC 44-6 (Industrial Carbohydrates)
AB Water sol. **starch** derivs. with a high degree of substitution (DS .ltoreq.1) contg. quaternary ammonium groups were prepd. by reacting **starches** with (3-chloro-2-hydroxypropyl)trimethylammonium chloride in EtOH/NaOH/H2O or with (2,3-epoxypropyl)trimethylammonium chloride in aq.-alk. soln. Four types of **starches** were examd.: Hylon VII (70% **amylose**), **potato starch** (28% **amylose**), maize **starch** (28% **amylose**), and waxy maize **starch** (1% **amylose**). The DS values of the samples can be controlled by adjusting the molar ratio of **cationization** agent to anhydroglucose unit and is only slightly dependent on the **amylose** content of the starting **starch** material. The structures of the **cationic starch** derivs. were confirmed by NMR spectroscopy. Dewatering expts. with the **cationic starch** derivs. to evaluate their **flocculation** properties were conducted on the harbor sediment suspension using a lab. pressure filtration app. The **cationic starches** were used alone and in combination with a high-molar-mass synthetic polyanion (poly(acrylamide-co-acrylate), PAA). Both dependence on the DS of the sample and influence of the **amylose**/**amylopectin** ratios of the initial native **starch** were obsd. The highest dewatering index of 63 was found for the **cationic** polyelectrolyte based on the **amylopectin** rich waxy maize **starch** in monoflocculation. In case of dual **flocculation** using PAA a dewatering index of even 85 was attained.
ST **flocculation** property **cationized starch**; **cationization starch** quaternary ammonium salt
IT Polyelectrolytes
(anionic; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
IT Polyelectrolytes
(**cationic**; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
IT **Flocculation**
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
IT 3033-77-0, Quab 151 3327-22-8, Quab 188
RL: RCT (Reactant); RACT (Reactant or reagent)
(modifier; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
IT 9063-45-0P, 2-Hydroxy-3-(trimethylammonio)propyl **starch**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
IT 79-06-1DP, Acrylamide, polymers with acrylates, complexes with **cationic starch** 79-10-7DP, Acrylic acid, derivs., polymers with acrylamide, complexes with **cationic starch** 9063-45-0DP, 2-Hydroxy-3-(trimethylammonio)propyl **starch**, complexes with acrylamide-acrylate copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bohm, N; Colloid Polym Sci 1997, V275, P73 HCAPLUS

(2) Bracker, U; HANSA Schiffahrt - Schiffbau - Hafen 1993, V130, P64
(3) Burkert, H; Ullmann's Encyclopedia of Industrial Chemistry, 5th edition 1988, VA11, P251ff
(4) Carr, M; Starch/Starke 1981, V33, P310 HCAPLUS
(5) Dicke, R; Carbohydr Polym 2001, V45, P43 HCAPLUS
(6) Haack, V; Macromol Biosci, to be submitted
(7) Heinze, T; Carbohydr Polym 2000, V42, P411 HCAPLUS
(8) Heinze, T; Starch/Starke 1999, V51, P11 HCAPLUS
(9) Heinze, T; Starch/Starke 2001, V53, P262
(10) Heitner, H; Kirk-Othmer, Encyclopedia of Chemical Technology, 4th edition 1994, V11, P61ff
(11) Katsura, S; Carbohydr Polym 1992, V18, P283 HCAPLUS
(12) Kulicke, W; Chem Ing Tech 1993, V65, P541 HCAPLUS
(13) Kweon, M; Starch/Starke 1996, V48, P214 HCAPLUS
(14) Kweon, M; Starch/Starke 1997, V49, P59 HCAPLUS
(15) Merta, J; Colloids Surf, A 1999, V149, P367 HCAPLUS
(16) Merta, J; J Dispersion Sci Technol 1999, V20, P677 HCAPLUS
(17) Merta, J; Macromolecules 2001, V34, P2937 HCAPLUS
(18) Spurlin, H; J Am Chem Soc 1939, V61, P2222 HCAPLUS
(19) Wilke, O; Carbohydr Res 1995, V275, P309 HCAPLUS
(20) Wilke, O; Starch/Starke 1997, V49, P453 HCAPLUS

L72 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:84928** HCAPLUS
DN **132:124425**
TI **Starch** derivative-based **adhesive** composition
IN Bleeker, Ido Pieter; Kamminga, Willem; Kesselmans, Ronald Peter Wilhelmus
PA Cooperatieve Verkoop- En Productievereniging Van Aardappelmeel En Derivaten, Neth.
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09J103-04
ICS C08B035-00; C09J103-14
CC 44-8 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000005319	A1	20000203	WO 1999-NL459	19990719
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2337890	AA	20000203	CA 1999-2337890	19990719
	AU 9950708	A1	20000214	AU 1999-50708	19990719
	BR 9912349	A	20010417	BR 1999-12349	19990719
	EP 1109873	A1	20010627	EP 1999-935175	19990719
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	EP 1998-202489	A	19980723		
	WO 1999-NL459	W	19990719		

AB The compn. contains a **starch** having .gtoreq.95% **amylopectin**, which has been modified by **crosslinking**, **etherification** or/and **esterification**. The invention further relates to a process for prepg. the **adhesive** compn: and to the use thereof for adhering wallpaper or billposters to a substrate. Thus, a wallpaper **adhesive** obtained from epichlorohydrin-

crosslinked carboxymethylated **amylopectin potato** **starch** had good balance of adhesion and easy release.

ST **amylopectin starch** epichlorohydrin **crosslinked** carboxymethylated **adhesive**; wallpaper **adhesive** carboxymethylated epichlorohydrin **crosslinked starch**

IT **Adhesives**
(**starch** deriv.-based **adhesive** compn. for wallpaper)

IT Paper
(wallpaper; **starch** deriv.-based **adhesive** compn. for wallpaper)

IT 72316-65-5P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**starch** deriv.-based **adhesive** compn.)

IT 3327-22-8DP, 3-Chloro-2-hydroxypropyltrimethylammonium chloride, reaction products with **starch** copolymer 69331-40-4P, Epichlorohydrin-carboxymethyl hydroxypropyl **starch** copolymer 161108-85-6P 188363-65-7DP, Hydroxypropyl **starch**-sodium trimetaphosphate copolymer, reaction products with 3-chloro-2-hydroxypropyltrimethylammonium chloride
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**starch** deriv.-based **adhesive** compn. for wallpaper)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Avebe; EP 0799837 A 1997 HCAPLUS
(2) Bomball, W; US 3950593 A 1976 HCAPLUS
(3) Chemstar Products Company; EP 0852235 A 1998 HCAPLUS
(4) Eden, J; US 5403871 A 1995 HCAPLUS
(5) FrEres, R; WO 9743225 A 1997 HCAPLUS
(6) Musselman, C; US 4014727 A 1977 HCAPLUS
(7) National Starch And Chemical Investment Holding Corporation; EP 0458233 A 1991 HCAPLUS

L72 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:15953 HCAPLUS

DN 128:63104

TI **Very lightly crosslinked** carboxymethyl **starch** preparation for use as a retardation agent and in retarded pharmaceutical compositions

IN Lochner, Thomas

PA Chemische Fabrik Pirna-Copitz G.m.b.H., Germany

SO Ger. Offen., 10 pp.
CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L003-08
ICS A61K009-22; C08B031-14

CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): **63**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19622790	A1	19971211	DE 1996-19622790	19960606
	WO 9746592	A1	19971211	WO 1997-DE1138	19970606
	W: US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 904298	A1	19990331	EP 1997-926983	19970606
	EP 904298	B1	20020403		
	R: AT, CH, DE, ES, FR, GB, IT, LI, NL, IE				
	AT 215566	E	20020415	AT 1997-926983	19970606
PRAI	DE 1996-19622790	A	19960606		
	WO 1997-DE1138	W	19970606		

AB The title products, having a low viscosity and forming clear, gel-like solns. in H2O, are prepd. Reaction of 850 g **potato starch** in 1.5 L MeOH with 450 mL 45% NaOH and then with 300 g ClCH2CO2H gave a fine, nearly white, free-flowing powder with pH 5.5-7.5, NaCl content <1%, Na glycolate content <2%, drying loss <10%, and degree of substitution 0.15-0.13, forming a 2% aq. soln. as a clear, low-viscosity gel. Use of the product in pharmaceutical tablets is exemplified.

ST carboxymethyl **starch crosslinking** light; retardation agent carboxymethyl **starch**; pharmaceutical delayed carboxymethyl **starch**; gel aq carboxymethyl **starch**

IT Drug delivery systems
(sustained-release; very lightly **crosslinked** carboxymethyl **starch** prepn. for use in retarded pharmaceutical compns.)

IT 9057-06-1P, CM-**starch**
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(very lightly **crosslinked** carboxymethyl **starch** prepn. for use as a retardation agent and in retarded pharmaceutical compns.)

L72 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1992:533215** HCAPLUS
DN **117:133215**
TI **Cationic crosslinked starch** derivatives as drainage and retention aids for **paper manufacture**
IN Anderson, Kevin R.
PA Cargill, Inc., USA
SO U.S., 12 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM D21H017-29
NCL 162175000
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5122231	A	19920616	US 1990-534945	19900608
PRAI US 1990-534945		19900608		

AB Addn. of **cationic crosslinked starch** (I) to anionic pulp or furnish during paper manuf. results in near zero .zeta. potential, increases I loading and drainage, and enhances the wet and dry strength of paper and retention of fines and fillers. Thus, paper stock mixed with (3-chloro-2-hydroxypropyl)trimethylammonium chloride **starch** ether **crosslinked** with Etadurin-31 (a polyaminopolyepoxide polymer) showed drainage enhancement of 30-50% and retention improvement of 5-10% over **cationic** corn and **cationic potato** I. Significantly increases in tensile and bursting strength were also obsd. upon addn. of **cationic crosslinked** I.

ST **cationic crosslinked starch** paper manuf; alkylammonium chloride **starch** ether **crosslinked**; polyaminopolyepoxide **crosslinker cationic starch**

IT Paper
(drainage and retention aids for, **crosslinked cationic starch** derivs. as)

IT Quaternary ammonium compounds, polymers
RL: USES (Uses)
(hydroxyalkyltrimethyl, chlorides, polymers, **crosslinked**, drainage and retention aids, for paper)

IT **Crosslinking agents**

(polyaminopolyepoxides and phosphorus oxychloride and glycol ether, for **cationic starch**)

IT 2425-79-8D, 1,4-Butanediol diglycidyl ether, reaction products with **cationic starch** 10025-87-3D, Phosphorus oxychloride, reaction products with **cationic starch** 56780-58-6D, reaction products with ethers or epoxy resins or phosphorus compds. 143476-52-2D, Etadurin 31, reaction products with **cationic starch**
RL: USES (Uses)
(**crosslinked**, drainage and retention aids, for paper)

L72 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1991:45365** HCAPLUS
DN **114:45365**
TI Destructurized **starch** manufacture
IN Sachetto, Jean Pierre; Egli, Markus; Stepto, Robert Frederick Thomas; Zeller, Heinz
PA Warner-Lambert Co., USA
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C08B030-12
ICS C08L003-06
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 391853	A2	19901010	EP 1990-810256	19900329
	EP 391853	A3	19920226		
	R: BE, DE, FR, GB, IT, NL				
	GB 2231880	A1	19901128	GB 1989-7459	19890403
	CA 2013134	AA	19901003	CA 1990-2013134	19900327
	CN 1046169	A	19901017	CN 1990-101697	19900327
	JP 03002236	A2	19910108	JP 1990-75801	19900327
PRAI	GB 1989-7459		19890403		

AB Destructurized **starch** with good thermoplastic processability contains bound phosphate groups and 5-30% H2O, the ratio M2+-M+-H+ being 0.0-1.9:0.0:0.9:0.0-1.4 (M2+ = divalent **cations** bound to phosphate; M+ = monovalent **cation**) and M2+ + M+ + H+ being 2 equiv./phosphate group. Thus, native **potato starch** phosphate (M2+-M+-H+ = 0.5:0.7:0.8; H2O 20%, n206 anhydroglucose units/phosphate group) was stirred in water contg. 28 g CaCl2 and 73 g NaCl for 30 min, filtered, and washed to give a **starch** with Ca2+-Na+-H = 0.9:0.4:0.7. This **starch** could be injection molded in the presence of additive at 1430 bar with a defect level 0%; vs. 1990 bar and 15%, resp., for untreated **starch**.

ST moldability **starch** phosphate salt

IT Bottles
Containers
Packaging materials
Pipes and Tubes
(**starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms
(capsules, **starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms
(granules, **starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms
(powders, **starch** phosphate salts for molding of)

IT 131595-11-4P 131595-12-5P
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, with good moldability)

L72 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN 1988:612634 HCAPLUS
DN 109:212634
TI **Waterproofing starch** binders using a microencapsulated agent
IN Jansen, Johannes Jacobus; Mossou, Bernardes Hendricus Franciscus; Poort, Hans
PA AVEBE B.A. Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.
SO Eur. Pat. Appl., 5 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM D21H001-24
ICS C09J003-06
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 33
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 278582	A2	19880817	EP 1988-200241	19880210
	EP 278582	A3	19881005		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	NL 8700330	A	19880901	NL 1987-330	19870211
	FI 8800481	A	19880812	FI 1988-481	19880202
	NO 8800548	A	19880812	NO 1988-548	19880209
	JP 63227891	A2	19880922	JP 1988-27840	19880210
	US 4873147	A	19891010	US 1988-155042	19880211
PRAI	NL 1987-330		19870211		

AB Waterproof **starch** (I) binders are applied to substrates, e.g., paper, by premixing a I dispersion with a microencapsulated waterproofing agent or catalyst, and then allowing the waterproofing agent to react with I mols. by digesting the microcapsules. Thus, 100 wt. parts aq. **potato** I phosphate soln. (pH 6.3) was mixed with 5 wt.% Al2(SO4)3 (II) microencapsulated in wax to form an **adhesive** soln., which was spread on kraft paper and then bonded to grayboard. The paper-grayboard laminate was pressed at 120.degree. and 3.5 bar for 5 s and then immersed in H2O at 25.degree., showing complete delamination after 3.5 h, compared with complete delamination after 5 min without II. When II was added in nonmicroencapsulated form, spontaneous **crosslinking** occurred, which prevented the use of the soln. as an **adhesive**.
ST **starch** waterproofing microencapsulated aluminum sulfate; **adhesive** paper waterproofed **starch** ester; wax microencapsulated aluminum sulfate
IT Paper
Paperboard
(manuf. of waterproof, **starch** ester contg. microencapsulated aluminum sulfate in)
IT Waxes and Waxy substances
RL: USES (Uses)
(microcapsules, contg. aluminum sulfate, in **starch** ester **adhesive** manuf., waterproof)
IT Waterproofing
(of **starch** ester **adhesive**, with microencapsulated aluminum sulfate)
IT **Adhesives**
(**starch** ester-microencapsulated aluminum sulfate compn., for paper and paperboard, waterproof)
IT Encapsulation
(micro-, of aluminum sulfate, with wax, in **starch** ester **adhesive** manuf., waterproof)

IT 11120-02-8
RL: USES (Uses)
(**adhesives**, waterproofing of, with microencapsulated aluminum sulfate, for paper)
IT 10043-01-3, Aluminum sulfate
RL: USES (Uses)
(microencapsulated, waterproofing agents, for **starch** ester **adhesives**)

L72 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1981:53008** HCAPLUS
DN **94:53008**
TI Stable active granule preparations
PA Agency of Industrial Sciences and Technology, Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC A61K009-00
CC 63-7 (**Pharmaceuticals**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55130909	A2	19801011	JP 1979-39226	19790331
	JP 57029447	B4	19820623		
	US 4339360	A	19820713	US 1980-129335	19800311
PRAI	JP 1979-39226		19790331		

AB Aldehyde group-contg. high mol.-wt. substance granules are coated with OH-contg. high mol. wt. substance (such as poly(vinyl alc.)) to produce a stable granule product. The granules can be used in the removal of urea, NH3 and lower amines from blood or other body fluids. For example, **potato starch** was oxidized to form dialdehyde **starch** [9047-50-1], which was dispersed in water and treated with poly(vinyl alc.) [9002-89-5] and then with concd. H2SO4 at 40.degree. for 5 h. The granules were collected and repeatly washed with water to give stable, poly(vinyl alc.)-coated dialdehyde **starch** granules. Aldehyde groups on the surface of granules were reacted with the OH-group of poly(vinyl alc.).
ST dialdehyde **starch** polyvinyl alc coating; blood **detoxication** adsorbent
IT Amines, biological studies
RL: BIOL (Biological study)
(blood toxins, poly(vinyl alc.)-coated dialdehyde **starch** granules as adsorbent for removal of)
IT Circulation
(extracorporeal, poly(vinyl alc.)-coated dialdehyde **starch** granules as adsorbent for amines removal in)
IT 9002-89-5
RL: BIOL (Biological study)
(dialdehyde **starch** granules coating with, for blood amino compds. removal)
IT 9047-50-1
RL: BIOL (Biological study)
(granules, polyvinyl alc.-coated, for blood amino compds. removal)

L72 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1977:73798** HCAPLUS
DN **86:73798**
TI Biodegradable plastic film
PA Personal Products Co., USA
SO Neth. Appl., 10 pp.
CODEN: NAXXAN
DT Patent

LA Dutch
IC A61L015-00
CC 36-6 (Plastics Manufacture and Processing)
Section cross-reference(s): **63**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 7504183	A	19761012	NL 1975-4183	19750408
PRAI	NL 1975-4183		19750408		

AB Biodegradable moisture barrier films contain a nonbiodegradable film-forming material, 40-60% (based on total) homogeneously dispersed biodegradable material, esp. a carbohydrate or protein, and optionally <60.degree. (based on total) of a plasticizer. Thus, 30 parts **potato starch** dextrin [9004-53-9] was slurried with 900 parts cold water, mixed with 50 parts poly(vinyl alc.) [9002-89-5] and 20 parts glycerol [56-81-5], stirred 30 min at 93.degree., cast into a film on a waxed glass sheet, and dried 5-10 min at 71.degree., giving a self-supporting film with thickness 40 .mu., which was strong, flexible, and water-impermeable, and was suitable for use as an outer moisture barrier layer in **applications** such as disposable diapers and sanitary napkins.
ST biodegradable moisture barrier film; polyvinyl alc biodegradable film; dextrin biodegradable film additive; carbohydrate biodegradable film additive; protein biodegradable film additive; glycerol plasticizer biodegradable film
IT Biodegradable materials
(dextrin-glycerol-poly(vinyl alc.) films)
IT 9004-53-9
RL: USES (Uses)
(biodegradable additive, for plastic films)
IT 9002-89-5
RL: USES (Uses)
(biodegradable films, contg. dextrin)
IT 56-81-5, uses and miscellaneous
RL: MOA (Modifier or additive use); USES (Uses)
(plasticizers, for biodegradable poly(vinyl alc.) films)

L72 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1974:110182** HCAPLUS
DN **80:110182**
TI Modified polysaccharide **flocculating** agents
IN Rothwell, Eric; Smalley, Graham
PA Allied Colloids Ltd.
SO Ger. Offen., 20 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C08B
CC 44-5 (Industrial Carbohydrates)
Section cross-reference(s): 60
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2312450	A1	19730920	DE 1973-2312450	19730313
	GB 1413301	A	19751112	GB 1972-11618	19730223
	US 3823100	A	19740709	US 1973-337987	19730305
PRAI	GB 1972-11618		19720313		

AB **Potato** or corn **starch** was treated with acrylamide (I) and the product dimethylaminomethylated to give 2-[(dimethylamino)methylcarbamoyl]ethyl **starch** ether (II) [50806-97-8] useful as a **flocculating** agent for kaolin suspension and as a dewatering agent for cellulose fiber suspension or aq. sewage sludge. Thus, an aq. mixt. contg. **potato starch**

, I, and NaOH was heated 24 hr at 50.deg., neutralized with HCl, pptd. with MeOH, and filtered to give an intermediate contg. 2.1% N with a substitution degree of 0.294, which was treated in aq. soln. with Me2NH and HCHO 16 hr at 40.deg. to give II. An aq. 290 kaolin suspension showed a sedimentation rate of 305 cm/hr when mixed with 500 ppm (based on the kaolin) II compared with 42.6 cm/hr when **potato starch** contg. 0.1% active material was used.

ST **starch** acrylamide **modification;** aminomethylcarbamoylethyl ether **starch; flocculating** agent **starch;** dewatering agent **starch;** sewage sludge dewatering agent; cellulose fiber suspension dewatering; carbamoylethyl ether **starch**

IT **Flocculating** agents
(acrylamide **starch** derivs., for cellulose pulp)

IT Pulp, cellulose
(**flocculating** agents for, acrylamide-modified **starch** as)

IT Waste water treatment
(**flocculating** agents for, acrylamide-treated **starch** as)

IT 2-Propenamide, reaction products with **starch** and dimethylamine
Methanamine, N-methyl-, reaction products with **starch** and acrylamide
Starch, reaction products with acrylamide and dimethylamine
RL: USES (Uses)
(**flocculating** agents, for kaolinite suspensions and sewage water)

IT 1318-74-7, uses and miscellaneous
RL: USES (Uses)
(**flocculating** agents for, acrylamide-modified **starch** as)

IT 50806-97-8
RL: USES (Uses)
(**flocculating** agents, for kaolinite suspensions and sewage water)

L72 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1969:514437** HCAPLUS
DN **71:114437**
TI **Cationic starch** compositions
IN Dishburger, Henry J.; Coker, William P.
PA Dow Chemical Co.
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
IC C08B; D21H
NCL 260009000
CC 44 (Industrial Carbohydrates)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3467608	A	19690916	US 1966-560828	19660627
	BE 734981	A	19691223	BE 1969-734981	19690623
PRAI	US 1966-560828		19660627		
	CA 1969-53143		19690530		

AB **Cationic starch** compds. are prepd. by treating a **starch** with a polyalkylenimine or polyalkylenepolyamine with mol. wt. .gtoreq.50,-000. Thus, 25 g. **potato starch** (I) was added to 50 g. 33% aq. polyethylenimine (II) prepd. by aq. polymn. of ethylenimine with ethylene dichloride, heated 2 hrs. at 90.degree., cooled, and poured into 2:1 MeOH-Et2O. The modified I ppt. was collected, washed with MeOH, and dried overnight at 25.degree. and 1 hr. at

75.degree., giving a white powder which was suspended in HCl-acidified 3:2 MeOH-H2O, washed with this soln., washed with MeOH, and dried. A suspension of 24.77 g. I in 475 g. H2O was heated 1 hr. at 87.degree., heated with 0.23 g. II (33% aq.) for 1 hr. at 87.degree., dild. with 475 g. H2O, and cooled. This product and a similar product prepd. with **cornstarch** (III) were dild. with H2O for use as **flocculating** agents on magnetite-type taconite tailings (**flocculating** agent, ppm. agent used, optical d., and in./min. settling rate given): none, -, - (offscale), - (offscale); II-modified I, 20, 29, 17.7; triethylenetetramine-1,2-dichloroethane condensate (IV)-modified III, 20, 55, 15.0; II-modified III, 20, 315, 12.0; IV-modified III, 100, 215, 8.6. Better **flocculation** was obtained by using the II-modified I than by using aminoethylated **starch** prepd. from ethylenimine and I.

ST **cationic starch** compns; **starch** compns **cationic**; **potato starch** polyamines; corn **starch** polyamines; polyethylenimine **starch** compns; **flocculating** agents taconite tailings; taconite tailings **flocculating** agents

IT **Flocculation**
(agents for, ethylenimine polymer-modified **starch**)

IT Amines, compounds
RL: USES (Uses)
(polyalkylenepoly-, reaction products with **starch**, as **flocculants**)

IT **Starch**
RL: USES (Uses)
(reaction products with ethylenimine polymers, as **flocculants**)

IT 9002-98-6 25702-73-2
RL: USES (Uses)
(reaction products with **starch**, as **flocculants**)

L72 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1969:492828** HCAPLUS
DN **71:92828**
TI Production of enzyme-degraded **starch**
AU Nacu, A.; Keneres-Ursu, I.
SO Celuloza si Hirtie (1956-1974) (1969), 18(5), 201-6
CODEN: CLOZA8; ISSN: 0008-879X
DT Journal
LA Romanian
CC 43 (Cellulose, Lignin, Paper, and Other Wood Products)
AB The advantages of degrading **starch** (I) enzymically are stressed in comparison with oxidn., **esterification**, or other transformations of I for paper coating uses. In 17 expts. with Romanian **potato** I, using amidosol (II), a Romanian product contg. pancreatic .alpha.-amylase, the concns. of I and II, the pH, time and temp. of hydrolysis and of the enzyme inactivation, were varied in order to obtain a >15-hr. stability of the hydrolyzed product, as required by the paper industry. The degree of hydrolysis was estd. from the viscosity, surface tension, and the amt. of reducing substances formed. The latter are undesirable, because they reduce the **adhesive** properties of the product. The following procedure is recommended: To 400 l. H2O in a vat, add gradually, after starting the agitator, 100 kg. I to insure a uniform dispersion. After homogenizing it, heat to 50.degree. and add 0.6 kg. II within <10 min., until I gels, maintaining at 50.degree. for 40 min. Then raise the temp. within 10 min. to 64.degree., and during the following 30 min. to 72.degree.. Inactivation of the enzyme by increasing the temp. to 95.degree. for 12 min. and then to 100.degree. for 30 min. immediately follows hydrolysis. The I thus hydrolyzed had a fluidity (by the DIN method) of 11-12 stokes at 50.degree. and of 12-13 stokes at 25.degree.. The Brookfield viscosity

was 11.5 and 16.5 cp. at 50.degree. and 25.degree., resp., which after heating and cooling attained 12.5 and 17.5 cp., resp.
ST enzyme degrdn **starch**; **starch** enzyme degrdn; degrdn **starch** enzyme; paper coatings **starch**; coatings **starch** paper
IT Enzymes
RL: RCT (Reactant); RACT (Reactant or reagent)
(**starch** hydrolysis by)
IT **Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, by pancreatic .alpha.-amylases)
IT 9000-90-2, Amylases, .alpha.-
(in pancreas, **starch** hydrolysis by)

L72 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1951:51593** HCAPLUS
DN **45:51593**
OREF 45:8792b-e
TI **Starch adhesive** sheet material and composition therefor
IN Nestor, Leonard R.
PA Minnesota Mining & Manufg. Co.
DT Patent
LA Unavailable
CC 28 (Sugars, Starches, and Gums)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2559043		19510703	US	

AB A H2O-activated **adhesive** sheet material is prepd. from a **starch**-base **adhesive** and a paper backing. A soln. of 250 parts NaOCl in 1400 H2O is heated to 85.degree.F., 1700 **potato starch** added, and high-speed stirring is continued 30 min., the temp. rising to 105.degree.F. Aliquots are withdrawn, neutralized, and 50% NaOH is added (in the ratio for the **adhesive** formula), and the viscosity detd. When the viscosity is 800-1200 centipoises at 120.degree. and concn. approx. 50% solids, 340 parts 50% NaOH is added to the batch at such a rate that the temp. does not exceed 125.degree.. The **adhesive** is applied by transfer rolls to paper backing at 100-120.degree. and the H2O removed at 200-270.degree.. The **application** to 60-lb. kraft paper (ream of 320 sq. yards) is 15-20 lb. **adhesive**/ream, the amt. of H2O used for activation 8-10 lb./ream, and the moistened **adhesive** retains its tack for 10-25 sec.
IT **Adhesives**
(from **starch**, for sheet materials)

L72 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1945:24785** HCAPLUS
DN **39:24785**
OREF 39:3956g-i
TI **Adhesive starch** composition
IN Fenn, James E.
PA Stein, Hall & Co.
DT Patent
LA Unavailable
CC 28 (Sugar, Starch, and Gums)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2372666		19450403	US	

AB An **adhesive** compn. consisting of a mixt. of enzyme-converted **starch**, raw **starch**, urea, and salt is described.

Tapioca or **potato starch** is preferred to other varieties. For example, 600 lbs. of high-grade tapioca **starch**, 800 lbs. of H2O, and 4 oz. of dried malt diastase are heated with stirring to 160.degree.F., allowed to stand for 30 min., and heated to 190.degree.F. to inactivate the enzyme. Urea 50 lbs., NaCl 20 lbs., and cold H2O 150 lbs. are then added, followed by 400 lbs. of medium-grade tapioca **starch**. The whole is then stirred until homogeneous. The **adhesive** material is useful in cloth and paper laminating **applications**.

L72 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1939:31527** HCAPLUS
DN **33:31527**
OREF 33:4468f-h
TI **Flocculation** and **clarification** of slimes with organic **flocculants**
AU Gardner, Geo. R.; Ray, Kenneth B.
SO Am. Inst. Mining Met. Engrs., Tech. Pub. (1939), No. 1052, 20 pp.
DT Journal
LA Unavailable
CC 1 (Apparatus, Plant Equipment, and Unit Operations)
AB **Starch** solns. capable of **flocculating** finely divided solids suspended in H2O can be prepd. either by heating under pressure at 100-160.degree. or by causticizing **starch** paste. Max. efficiency with a noncaustic soln. is attained when the reagent is prepd. at 140-145.degree.. Causticizing temp. depends on strength of caustic soln. used. At 25.degree. an efficient reagent can be produced with a 2.5% soln. of com. NaOH. **Starch** reagent can be prepd. most economically by causticizing or heating a 5% **starch** paste with thorough mixing and dilg. Any **starch** can be used, but **potato starch** is recommended. Solns. prepd. by heat alone will retain their properties for 3 days, causticized solns. for 2 weeks or more. As percentage of solids in slurry increases, rate of settling decreases, independent of material or treatment. Settling index increased with increasing temp., e. g., 4 times between 4 and 40.degree.. Min. rate of settling is at pH 7.0; the most pronounced rise is on the alk. side.

L72 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1939:21382** HCAPLUS
DN **33:21382**
OREF 33:3080b-c
TI Surgical plaster bandage
IN Audley-Charles, John K.
PA Frank Worrall
DT Patent
LA Unavailable
CC 17 (**Pharmaceuticals**, **Cosmetics**, and Perfumes)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2144675		19390124	US	

AB A strip of textile material has incorporated with it a mixt. formed of the dry materials, e. g., plaster of Paris 14, cassava **starch** 4, and **potato starch** 4 parts, and an accelerator such as K2SO4 and borax to regulate the speed of setting of the mixt. when moistened, such a plaster being hard setting but easily disrupted and removed by treatment with water at a temp. safe for **application** to the human body.

L72 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN **1935:39964** HCAPLUS
DN **29:39964**

OREF 29:5199a-b
TI **Starch adhesives** and their **applications**
AU Ducro
SO Recherches & inventions (1935), 16, 254-7
DT Journal
LA Unavailable
CC 13 (Chemical Industry and Miscellaneous Industrial Products)
AB A description of the manuf. of **potato starch** and of the use of **starch** paste in the manuf. of wall paper and of the use of powdered **starch** as an **adhesive** for applying wall paper.